

Population Issue



Harvard Medical Alumni Bulletin

Spring 1967

Because the challenge of population overgrowth is consuming more and more of the thoughts of responsible people, the HMAB is devoting this issue to the population problem.

With the kind assistance of Dr. Roger Revelle, Richard Saltonstall Professor of Population Policy at Harvard School of Public Health, and director of the Center for Population Studies, the Editors have brought together a panel of seven authorities.

What stands out clearly in their discussions is the following:

1. Overpopulation is being accepted as a problem.
2. Simple artificial mechanisms will not alone solve the problem.
3. Overpopulation and its control strike deeper into the heart of humans in general, and marriage in particular, than most have any idea.

Although there is every reason to be pessimistically Malthusian, these articles bring to the reader a feeling that some real thinking is being done about population growth. As history tells us, man and his environment will solve this problem as they have solved others in the past.



JOHN R. BROOKS '43B
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25 SHATTUCK STREET
BOSTON, MASS. 02115

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CONTENTS

INTRODUCTION	II
BIRTH CONTROL & POPULATION POLICY IN THE SOCIALIST WORLD.	2
<i>by Jean Mayer & H. Andre Van H. Mayer</i>	
TECHNOLOGY IS NOT MAGIC	8
<i>by John C. Cobb</i>	
A QUALITATIVELY DIFFERENT PROBLEM	10
<i>by John L. Thomas</i>	
RELIGION POLITICS & POPULATION A TIME FOR CHANGE	14
<i>by Ralph B. Potter, Jr.</i>	
WHAT I DO DOES MATTER.	22
<i>by Mary S. Calderone</i>	
THE KHANNA STUDY	24
<i>by John B. W'yon & John E. Gordon</i>	
POPULATION GROWTH AND THE DEVELOPMENT OF UNDERDEVELOPED COUNTRIES	29
<i>by Harvey Leibenstein</i>	
NINETY-ONE YEARS IS ONLY THE BEGINNING.	35
<i>by Duncan E. Reid</i>	
PIONEERING FOR THE FUTURE.	37
<i>by John G. Freymann</i>	
ALONG THE PERIMETER	40
INTERNSHIP LIST	45
ALUMNI COUNCIL BALLOT	47
ALUMNI NOTES.	54
ALUMNI REUNION PROGRAM.	59
OBITUARIES	63

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Birth Control and Population Policy in the Socialist World



by Jean Mayer, Ph.D., D.Sc.

and

H. Andre Van H. Mayer

American public opinion has become so obsessed with the possibility of changes in the policy of the Catholic hierarchy on birth control, that hardly any attention has been paid to the thinking of leaders who control many more people than the Pope—and control them much more effectively. We refer to the position on birth control and population of the leaders of the “socialist” countries; more specifically, Russia and Eastern Europe, but above all, China. An understanding of the past and present thinking in these countries is of considerable interest, not only because there are over one billion people involved, and the population of the largest unit, China, is rapidly increasing, but also because there are signs that while their philosophy remains generally the same, the official policies, particularly in China, may be undergoing some very significant changes.

An understanding of the history of socialist and Communist thought on birth control and population policy is all the more important since Communist theoreticians, like Catholic theologians, are extremely anxious to preserve historical continuity. While historical details and the role of certain personalities may be rewritten if expedient, keeping faith with Marx, Engels, and Lenin continues to be essential. And, again like the Catholic Church, Communist regimes cannot take an experimental attitude about the future. They will not announce that such and such a policy will be tried, the results evaluated, and the policy modified accordingly. Every new doctrine has to be solidly based on the trinity of Marx, Engels, and Lenin (to which, in China, early gospels of Mao Tse-tung may be added), justified for theoretical reasons, and promulgated with the clear implication that this policy will last forever. The changes which are occurring now thus have to be based on a reinterpretation of the sacred texts.



It was one of the major intellectual catastrophes in the history of the world that Malthus, the first writer to create international interest in the problems inherent in population growth, identified himself closely with the wealthier classes, and presented the dangers of rapid or unlimited population growth as dangers to the comfort and the properties of the upper economic group. Malthus was a strong defendent of inequality among men and, in his *First Essay on the Principles of Population*, harps on "the fatal effects that would result to a society if every man had a valid claim to an equal share of the produce of the earth. . . . Some human beings must suffer from want," he says, and goes on to justify the need for some to accumulate an ever increasing surplus even though it may mean that others will starve. In a sense, particularly in the first edition of his essay, Malthus, half a century before Marx, preached a kind of class war, but he placed himself quite clearly on the side of the propertied classes. While Marx was to attempt to lighten the weight of the rich on the poor, Malthus, perhaps influenced by the rapidly increasing cost of the Poor Laws at the end of the 18th Century, appeared to be more eager to lighten the burden of the poor on the rich.

It is little wonder that, precisely on a moral basis, the whole 19th Century socialist movement made anti-Malthusianism a touchstone of orthodoxy. Or, that in this century, not only Communist leaders, but the socialist members of the governments of much of the uncommitted "third world" abhor any Malthusian sermonizing, however justified, on the dangers of overpopulation. In the case of China, and of other Asian countries as well, this aversion is reinforced by the vivid memory of the western consensus of the generation of Wilhelm II, Rudyard Kipling, and Theodore Roosevelt on

the "yellow peril." Finally, the profound lack of imagination displayed by Malthus regarding the potential of scientific agriculture hardly endeared him to reformers with their abiding faith in the power of science to resolve material and social problems.

The early socialist writers began their attack. Richard Owen, the founder of New Harmony, attacked Malthus on the ground that "as long as the Earth is not cultivated like a garden," overpopulation is not a valid concept. Fourier, the gastrosopher, predicted that as hygiene and the state of nutrition improved as a result of increased knowledge, women, while becoming more robust, would also become more sterile, thus nullifying Malthus' calculations. Proudhon, the father of French socialism, was outraged by Malthus' callous attitude towards the poor and exclaimed, "There is only one man too much on the Earth: Malthus!" His more extreme rival, Louis Blanc, also repeatedly attacked Malthus. More importantly, Marx and Engels were particularly violent in their attacks on Malthus, and imparted to the mainstream of socialist thought a strong impetus against the very concept of a population policy.

In *das Kapital*, Marx termed the *First Essay on Population* a school-boyish, superficial plagiarism of DeFoe, Sir James Stewart, Townsend Franklin and Wallace. He proclaimed that Malthus, like many other clergymen, was "an apologist for a bankrupt system which creates overpopulation." In Marx's eyes, Malthus "sinned against science" and was "a bought advocate, a pleader on behalf of [the proletariat's] enemies, a shameless sycophant of the ruling classes."

Engels, in a somewhat more sophisticated vein, felt that "the Malthusian theory is merely the economic expression of the religious dogma of contradiction between spirit and nature." As optimistic a believer in the coming technology as Malthus was ignorant of it, he thought that "the productivity of the land can be infinitely increased by the application of capital, labor and science." Like Marx, Engels felt that "the most open declaration of war of the bourgeoisie upon the proletariat is Malthus' Law of Population."

It is important, incidentally, to note that the 19th Century socialist writers did not oppose birth control as such. At no time did any of them express hostility against the efforts of nonsocialist reformers such as Francis Place, Charles Knowlton, Anti-Marcus, George Drysdale, Charles Bradlaugh, or Annie Besant to popularize birth control methods. Their opposition was to population limitation, which they viewed as the last resort of a society incapable of organizing either production or distribution. While the end result of the socialist position may often have appeared indistinguishable from Catholic doctrine, the rationale for the socialist attitude thus is quite different. In general, Catholic doctrine has not opposed population limitation; it has opposed, first, last, and always, a number of methods of birth control. It is true that some of the resemblances between socialist and Catholic attitudes have a more solid basis. Just as large Catholic minorities—in Canada, Holland, and the United States—have felt impelled to produce a large number of children (Quebec's *la bataille des berceaux* is the classic example), there have been times when socialist leaders have urged a multiplication of the proletariat to increase its power. For example, in 1913 Rosa Luxemburg and Clara Zetkin opposed the socio-democratic women who advocated a birth strike as a means of pressure to deter Germany from war. Their argument was,

"The people need more fighters, the world needs more Communists." Again, in 1914, Rosa Luxemburg proclaimed that "to limit birth is to capitulate, to renounce class war."

Lenin, who diverted so much of Marxist policy from Marx's intent, did not tamper with his stand on population. If anything, he accentuated it. Under Lenin's leadership, Communist attacks on Malthus continued unabated. Backward farming methods and unequal distribution, to be eliminated under Communism, were blamed for Russian and foreign food shortages. But, while opposing limitation of population growth, Lenin advocated free use of birth control for the "limited" purpose of "emancipating" women from domestic chores in order to serve the state. Approval of family planning, and the generally permissive attitude toward all sex matters have made the "established" Communist birth control policy somewhat ambiguous. It is violently opposed to Malthusianism and hence, to all *population* controls, but allows *birth* control, and sometimes even encourages it on the family level.

The overriding element in Soviet birth control policy has been the loss, in a half-century of existence, of some 80 million citizens through war and natural catastrophes. In the face of such decimation, a departure from the "ideal" course of laissez-faire became necessary, and the history of Soviet population policy is divided into at least three distinct segments.

The first began in 1920 with the initial post-Revolutionary laws on birth control. These were intended as a step forward for personal freedom. They legalized abortion and advocated contraception, both of which had been forbidden under Czarist rule. According to Lenin, the aim was "to draw women into socially productive labor, extricate them from 'domestic slavery.'" But during the late 1920's, famine and the turmoil of collectivization sent the abortion rate soaring to over 50 percent of all pregnancies in many areas. The birth rate fell by 30 percent in a decade (1925-35), the sharpest peacetime decline ever recorded by any nation.

Stalin did not consider the rate of population growth an important factor in the success of the Communist system. It was clear, however, that under the conditions at hand, the trend in Russia could be disastrous. In 1935, the liberal acts of 1920 were revoked. The next year, the first positive pro-natalist measure—a special allowance for families of over seven children—was introduced. By 1938, abortions had fallen by 97 percent, and most of the birth-rate loss was restored.

World War II brought new problems, and huge new losses, especially among the young. In 1944, the pro-natalist program was intensified, with bonuses and monthly allowances for the third and all subsequent children, and tax penalties for the childless and those with small families. While primarily intended to increase population, the system also reduced pressure for wage raises by redistributing income "to each according to his need." In 1947 the payments, amounting to five billion rubles a year, were cut in half.

Although the full force of anti-Malthusian ideology was directed indiscriminantly against all forms of birth control during the pro-natalist period, the policy was based on practical considerations rather than Marxist-Leninist dogma. Contrapositively, there is no convincing evidence that the return to liberal birth control policy, beginning with fertility-incentive reductions in 1947, and reaching its climax in a

virtual resurrection of the 1920 statutes in 1955, represented a systematic attempt to restrict population growth. Much of the liberalization did not come until the most difficult period of postwar rebuilding was past, and the development of the USSR's vast and unpopulated frontier regions had become a national goal. While the failure of Khrushchev's agricultural programs, particularly the virgin land scheme, unquestionably altered the state's viewpoint, it resulted in no important policy shifts. The current Soviet stand remains vocally anti-Malthusian, but operationally flexible. Many of Stalin's fertility rewards—payments (further reduced since 1957) for three or more children, and a "Heroine Mother" Order, complete with diploma from the Presidium of the Supreme Soviet for ten or more—are retained, if only because of their economic function in terms of the operation of large families.

There is little reason to doubt that the purpose of the new policy is as stated: to free women for other work (most Soviet doctors, for example, are women) and to end dangerous illegal abortions. Today, although abortion remains legal and widely practiced, emphasis has been placed on the free birth control clinics that distribute contraceptive information and equipment in Soviet cities. The present Soviet birth rate, while lower even than that of 1935, reflects a worldwide trend, and is commensurate with the level of economic development.

The Communist countries of Eastern Europe likewise have gone through drastic changes in policy, reflecting alternately a pro-natalist philosophy, and a desire to free women from unwanted pregnancies. Hungary and Czechoslovakia have extremely low birth rates dating from pre-Communist days, and it was natural that they would espouse a pro-natalist policy. During the early 1950's, they adopted more radical versions of the Stalinist pro-natalist devices, but the programs were not particularly effective. Soon after the Russian shift, Hungary adopted an extremely liberal birth control policy, while the Czech government, after an unheeded 1959 call for "an improvement in population trends," moved less precipitously in the same direction. A somewhat similar, although more faithfully Stalinist line was taken by East Germany, whose population was especially depleted by war and later, by the flow of young people to the West.

In these nations, as in the USSR, the stated aims of birth control programs, to eliminate dangerous illegal abortions, and to "free" women for other work, do not lack cogency. But they may lead to extremes, as in Rumania, where the introduction of inexpensive (\$1.65) abortions in 1957 reduced the birth rate by 40 percent in ten years. By the beginning of 1967, an estimated one in three pregnancies ended in abortion. In February, Bucharest, engaged in an ambitious economic development program, backed off sharply to a fairly conservative birth policy.

Poland, unlike the rest of Eastern Europe, did not have the problem of a low birth rate. Despite a heavily Catholic population, and a token church voice in state decisions, the Polish tendency was anti-natalist, primarily because of a tremendous school and housing shortage. There was even some early discussion of a program of population limitation, but it was quickly quashed as Neo-Malthusian heresy. Nonetheless, in 1958, Poland became the first Communist state to establish a "Birth Control Association" to distribute information on the rhythm method.

Of all Communist population policies, China's is the most important because of her already enormous population, and her staggering problems. Her 750 million people—more than those of the U.S., the USSR, Britain, France, West Germany, Italy and Japan combined—have one-fifth as much arable land which is inefficiently farmed, a small industrial plant, and inadequate natural resources. And, like other countries in the early stages of economic development, her rapid population growth is threatening to outstrip her production gains. Some experts predict massive famine in the early 1970's.

In fact, China actually suffered Malthusian overpopulation in the early 19th Century, when technological stagnation and social inefficiency led to a persistent decline in per capita food production, and in some regions, population contraction. Establishment of contact with the West at that time brought new methods that led to an improvement of this condition. Since then the Chinese population has grown rapidly, but recurrent famines showed that the problem was not fully solved. China, while offering her leaders some confirmation of the Marxist principle that overpopulation can be prevented by social and technological change, has never let them forget how serious a problem overpopulation is. At the same time, China was traditionally pro-natalist; filial piety was the main tenet of her philosophy, and a man was morally bound to produce many sons to honor himself and his ancestors.

The Chinese Communists, therefore, faced a mass of contradictions as they considered the question of population policy. Despite a 20-year bloodletting unmatched in all history, the census of 1953 revealed that China's population was approaching 600 million. The figure was milked for its full propaganda value, but Chairman Mao and his associates realized that, in their devastated and backward land, overpopulation was a real danger.

The first phase of the elaboration of a Red Chinese birth control policy predated by a year the analysis and release of the census figures. For one year, quiet, high-level discussions were held and in August, 1953, the regulations on contraception were revised by the minister of health. The actual census figures, which Mao always found unbelievably high, only added to the anti-natalist impetus. The second, or public phase, began on September 18, 1954, when Shao Li-tzu, a non-Party member serving on the State Council, spoke at the First National People's Congress. His speech took the outside world, and presumably most Chinese, by surprise. After the requisite castigation of Malthusianism, he went on to argue that, in the words of Lenin, "this in no way prevents us from drastically discarding all laws seeking to punish abortion and the propagation of medical theories on contraception . . . in order to advance the welfare of women and children during the transition to Socialism." Later that year a high-level symposium, directed by Liu Shao-chi, led to the formation of study groups on methods of contraception.

The movement was not supported by all officials. Chen Po-ta, an important theoretician, declared that there was "no sign of overpopulation in China." And, although Premier Chou En-lai declared in September, 1956 that "to protect women and children" and, in view of the severe school shortage, "we agree that a due measure of birth control is desirable," Marxist dogmatism in Peking, and traditionalism or uncertainty in the provinces, delayed action



by public health agencies.

Then, in February, 1957, on the eve of the Third Session of the Second National People's Political Consultative Congress, Chairman Mao stepped in publicly on the side of birth control. In his famous speech, "On the Correct Handling of Contradictions among the People," he stated that "the increase in grain harvest for the last two years has been . . . barely sufficient to cover the needs of our growing population . . . 40 percent of our youths have not been placed in primary schools. Steps must, therefore, be taken to keep our population for a long time at a stable level, say, to 600,000,000. A wide campaign of explanation and proper help must be undertaken to achieve this aim." Perhaps it was because Mao did not wish to be attacked for his "neo-Malthusian" views that this portion of the speech was deleted from the published version, although speeches by others at the Congress, including Health Minister Li Teh-chuan, were reported in full. Yeh Hsi-chun, a herbalist who served as Deputy of the Congress, recommended a contraceptive method, said to be effective for five years, consisting of swallowing large quantities of tadpoles on certain days. "The defect," he admitted, "is that the method can be used only in the spring."

The most remarkable aspect of this period of Chinese *birth control* discussion was the extent to which actual *population control* was presented as a necessity. While Ch'en Tu argued that "there is no relationship between birth control and Malthusianism," many Chinese statements, notably those of Fei Hsiao-t'ung, president of the National Institute for Minorities, abandoned the "family" arguments for warnings on overpopulation that sounded very much like Malthusian theory. Thus, although Malthus himself was criticized as much as ever, his theories seemed to be gaining. In addition to liberalized abortion and sterilization laws, the marriage age was raised—to 20 for men, 18 for women—and a substantial poster campaign emphasized the desirability of family planning.

The idea of restricting population growth that Chairman Mao proposed in 1957 was short-lived. At that time, the now classical expression, "Let a hundred flowers blossom, let a hundred schools of thought contend," was at its height. The "Hundred Flowers" relaxed the severe limitations previously imposed on intellectual activity, and permitted independent thinking, debate, the right to criticize, and to express individual views. The intellectuals began an all-out attack, and even went so far as to challenge the Communist claim of ideological superiority. Although the idea of restricting population growth was not a product of the "Hundred Flowers," it had become closely associated with it. And,

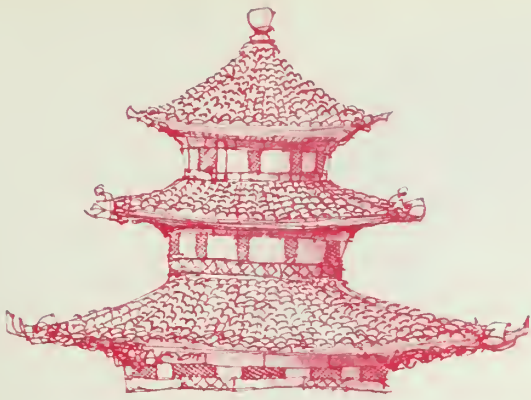
when the "Hundred Flowers" wilted, the concept of a stable population succumbed as well. Wang Ya-nan, president of Amoy University and a leading Marxist population expert, expressed indignation and fear that "the widespread thought remnants of Malthusianism would be able to resurrect themselves in a borrowed body (that of legitimate family planning)." In October, 1957, articles in *Jen min jih pao* attacked "neo-Malthusian rightists," including Fei Hsiao-t'ung and Peking University president Man Yin-chu. At the same time, six non-Party members of the State Council, charged with using the birth control issue to advance themselves, were purged. Shao Li-tzu, who had prudently limited his suggestions to traditional Leninist ideas, was able to survive by turning against these "rightists."

A curious facet of the attacks, which continued through 1958, was that, unlike the similar campaign in Russia, Chinese repudiation was limited to population control. The birth control program was deemphasized, but it did not halt entirely. "Leftist deviationists," who denied that any sort of control was useful, were criticized although not strenuously.

Even the short-lived Great Leap Forward of 1958, a radical program designed to transform China's large population into an asset through the use of intensive labor in industry and agriculture, had no positive pro-natalism associated with it. The work force was expanded by organizing women, as well as men, into labor brigades, actually breaking down the traditional family group. The fantastic economic gains reported in the first few months of the program prompted some rash claims on the number of people China could support, but this optimism was too short-lived to have any important effect on population policy.

In the 1960's, at least until the present internal upheaval, Chinese policy has tended towards anti-natalism. The liberal contraception and sterilization laws remain in effect, as does the raising of the marriage ages. In addition, a massive publicity campaign not only offers birth control information to the hitherto unenlightened villagers, but also encourages women to remain unmarried longer so as to continue their education and career. Separation is another device favored among the "middle class" of technicians and bureaucrats. Husband and wife live and work in different areas and only see one another on vacations. This system is especially vaunted because it preserves the usefulness of the educated women whose abilities are more in demand than unskilled labor. Abortion, on the other hand, has not been encouraged.

Thus, in China, Leninist "emancipation" of women is combined with what must be regarded in fact as a true



population control program. It is certainly not an all-out effort. For one thing, it cannot be admitted that China's population is a hindrance. In the face of Marxist dogma and the still-significant Chinese traditionalism, the tentative moves of 1957 and the recent past indicate that in this matter, as in so many others, Mao is synthesizing his own brand of Communism. It is quite different from the Kremlin's, and for once, perhaps, more hopeful.

The history of Chinese population policy sheds some light on the interpretation of Mao's best-publicized "population" statement—that China does not fear nuclear war because surely, after the bombing, her remaining population would make her the most powerful nation in the world. As events show, however, the Chinese do not necessarily believe their own propaganda. In this case, it seems probable that Mao has been attempting to rationalize China's lack of nuclear weapons, because her weakness, compared with the USA and the USSR, rankles her leaders, and impedes the realization of the goals of her foreign policy. It is, of course, a basic tenet of all Marxism that no weapon can prevent the eventual victory of the proletariat. In effect, China's population regardless of the problems it may present in the short run, remains her source of pride and strength, and her best guarantee of ultimate success.

A large number of non-Communist countries—from Algeria to India to Zambia—are led by socialists, many of whom consider themselves Marxists. Even among non-socialist leaders of the third world—in Latin America—there is strong suspicion that the United States is the major capitalistic, imperialistic and, to a certain extent, racist power in the world. It is essential, therefore, that we never use any tactics or language that will reinforce such suspicions. Additionally, we must never make our moves in favor of birth control or population policy resemble the Malthusian defense of the privileges of a financial oligarchy.

First, the choice of words is important. Harvard now has a chair of "population policy," a term more acceptable in Massachusetts than birth control. But, unfortunately, such a term is likely to evoke the most antagonistic reactions in other larger and more populated areas of the world.

Secondly, we must at all times make it very clear that we consider the problem of overpopulation to be as real in the United States as in the world at large. After all, in 1966, the U.S. had roughly one-sixteenth the population of the world spread on one-sixteenth the emerged land mass. It is unfortunate that the American public has been conditioned to view the problem of overpopulation almost exclusively in relation to food supply. We do not recognize that housing

shortage, crowding of hospitals, insufficient supply of nurses and teachers, crowding of roads and shortage of parking space, lack of park facilities, and air and water pollution are essentially aspects of the relative or absolute overpopulation with which the U.S. is afflicted.

Thirdly, once the existence of a population problem in the U.S. is recognized as an argument justifying our interest in problems of population in the world at large, our attention must not be exclusively directed to the poor—Negroes and Puerto Ricans. This would only give additional ammunition to those who accuse us of being worried about overpopulation in non-white India or Indonesia, but never about overpopulation in white Holland or Denmark.

It also seems forever necessary to repeat that history and philosophy are important, even in poor countries among poor people. In poor Catholic countries, the concept of a national policy of population limitation is entirely acceptable. The official policy of the Catholic Church justifies limitation of individual family size, using approved methods, on the grounds of economic necessity. Economic necessity covers both individual and national considerations. By contrast, in socialist and more particularly, in Communist countries, it would be a cardinal error to lay stress on any national necessity. The prudent course is to emphasize the health and welfare of the women, the need for relief from frequent pregnancies, and the desirability of securing time for education and community work; in other words, to speak for birth control on a personal basis, but never from the viewpoint of population policy.

Finally, though we recognize that discretion is not one of our national traditions, it would seem advisable for the high officials of the U.S. Government to stop making frequent and publicized declarations in favor of birth control programs in underdeveloped countries. Even more dangerous are the statements—such as that made last year by President Johnson on a nationally televised program—coupling our economic aid to a given country to a demonstration that active and successful birth control programs are being instituted. While such declarations are a source of joy to American crusaders for family planning, they are likely to boomerang, and make our very much needed help totally unpalatable to those who need it most.

Dr. Mayer is professor of nutrition and lecturer on the history of public health, Harvard School of Public Health. His son is a junior at Harvard College.



Technology Is Not Magic

by John C. Cobb '48

Can tropical Africa avoid a devastating population crisis? To answer this question, we must analyze the relationship of relative rates of population growth* to educational development, and agricultural production. Birth control alone will not bring about a significant lowering of the birth rate. There must be a basic change of attitudes, involving a long educational process that must begin in the preschool years. Such a change may take more than one generation, but there is time if we begin now.

The population crisis in overcrowded Japan was readily solved. A very high level of educational and technological development, combined with a strong desire for small families and the ready acceptance of legalized abortion, resulted in a

precipitous drop in the population growth rate, from over 2 percent per year in 1948, to less than 1 percent in 1957.

In the U.S., far less crowded than Japan and without legalized abortion, the growth rate has gradually dropped from nearly 4 percent in Colonial times, to less than 1 percent per year. Our birth rate now fluctuates in response to changing socio-economic conditions. The high level of education and technology in the U.S. makes effective contraception available to virtually all of the population. Today, actually 87 percent of white married couples have used, or expect to use, some method of contraception.

In fertile areas, India and Pakistan are almost as densely populated as Japan. However, educational and technological development is comparatively low, and most of the people desire large families. In spite of considerable foreign aid, and encouragement for the very ambitious Government supported family planning program, Pakistan's population is

*A population growth rate of 1 percent per year would double the population in 70 years; a growth rate of 4 percent per year would double it in 17½ years.

growing ever more rapidly. The rate has increased from less than 2 percent to nearly 3 percent in 15 years, largely due to reduction of the death rate. Famine is predictable within five to ten years, unless far reaching social and agricultural changes are instituted.

In some tropical African countries, growth rates are approaching 4 percent, but as yet, there is no widespread overcrowding. A population crisis can be averted if education and community development forge ahead of population growth. The danger is that technological advances in public health and agriculture often result in rapid population growth, thereby negating the advances being made in basic education, community development, and organized government.

There is still time—but not much—for African countries to avoid the impending fate of overpopulation and famine. A recent study of Public Health Problems in 14 French-speaking African countries by our National Academy of Sciences (N.R.C. 1966) concludes (Vol. 1, p. 91), "All that is needed, to prevent the growth of population outstripping food supplies, is a rational sense of priorities, planning public health measures to increase the efficiency of the community and not merely its size."

This is a logical statement for our highly-educated scientists to make. Their exposure to rational thinking and planning from earliest childhood undoubtedly made their conclusion seem obvious and easy. But it will not seem so obvious, or so easy, to the people and the governments of these tropical countries. In Africa, scientific education is in its earliest infancy; the literacy rate (less than 20 percent) is lower than almost any other part of the world. Magical thinking is prevalent; planning is not.

Improved technology in public health and agriculture might result in a significant increase of food production which would surpass the needs of the present population, as suggested in the above report. But history suggests that without a concurrent change in attitude toward the desirability for smaller families, the population would rapidly increase, far beyond the limit that could be reliably and continuously supported by the increased food production. This is exactly what happened in Ireland after the introduction of the potato around 1700, and in the Punjab after the development of an extensive irrigation system by the British around 1900. Subsequent events proved disastrous. The potato blight in Ireland, and soil salinity in Pakistan resulted in too little food for too many people. How can such a course of events be averted in Africa?

It is human nature for men to want their families to grow and prosper. In Africa, such growth and prosperity applies not only to the family, but to the tribe as well. The larger the tribe, the more political power it will have in the struggles to develop a national government. In such a context, few people are likely to see the logic of the National Science Foundation's "rational sense of priorities." The improved health of the farmers may indeed increase food production, as suggested by the Foundation's report, but unless there is a basic change of attitude, this will only set the stage for a further increase of population growth rates, even to above 4 percent.

Judging from the experience of Pakistan, when the population grows too rapidly, education declines. These African countries could become more densely populated than Japan, with a diminishing percentage of literate and educated people,

and an ever increasing total amount of human misery.

I do not mean to imply that this is the inevitable course. Far from it! In most of Africa, there is still time to avert such a tragedy for two important reasons: The population density is still relatively low, and the natural resources are still largely undeveloped.

Should the U.S. then, encourage family planning programs in tropical Africa as it has in India and Pakistan? Should our experts rush to these African governments with all our modern contraceptive pills and devices, and offer to help set up family planning clinics in all their towns? Should we provide American jeeps with audio-visual equipment to tour the countryside, and try to sell the illiterate African villagers on the benefits of family planning?

Such a program, identifiable as being supported or originating from America, would be received about as well in tropical Africa, as Communist Chinese agents promoting communism would be received in our country. A small percentage of people might listen, but the emotional reaction of the majority would be so strongly opposed that the whole idea would be rejected even before it had a chance to get started.

Can we help these African countries avoid the impending fate of overpopulation and famine?

Yes, but even more important than what we do, is how we do it. At this time, any offer of unilateral aid, particularly in the sensitive area of population control, could easily be misconstrued as an attempt for white America to repress the growth of black Africa. It is therefore essential that the work be done by local people perhaps being helped by the United Nations or internationally supported agencies with well established, acceptable development programs in these countries. Unilateral aid in population control is political dynamite.

It is unlikely that adults will develop "a rational sense of priorities" unless they are educated and exposed to rational thinking from an early age. There can be little success in "planning of public health measures to increase the efficiency of the community and not merely its size," unless this principle is understood and accepted at all levels of society. Thus, in order to avoid a population crisis, the most crucial need is for development programs in early childhood education and community responsibility, with emphasis on the effectiveness of community planning and cooperative action.

Widespread development of a rational approach to planning, rather than magical thinking, is a necessary condition for the lasting economic development of any community. Technical advances in public health, agriculture, and family planning are also desirable, but are not sufficient by themselves. They must be integrated into the overall program of community development and education. To expect a lasting rise in general living standards in tropical African villages from technology alone, without the necessary change in education and basic attitudes, is to indulge in magical thinking. Technology is wonderful, but it is not magic.

Dr. Cobb is professor and chairman of the department of preventive medicine at the University of Colorado Medical Center. He spent four years in Pakistan as director of the Medical Social Research Project on Population.

We have been so slow to recognize the full import of modern population trends that our initial awareness of their real significance is likely to induce panic rather than intelligent concern. What Malthus perhaps somewhat prematurely decried as the growing "prevalence of people" appears to be an emerging reality. Remarkable advances in the biomedical sciences and generous extension of health care services have considerably altered, and will continue to alter, the former dimensions of population growth throughout much of the world. Although available statistics for some large regions are admittedly inadequate, several general trends are clear. The overall population of the world is growing at an unprecedented rate. Serious imbalances between populations and available resources are already shaping up in several major regions. Population growth in some developing countries may rapidly overwhelm needed economic and social advances.

A world-wide review of population control programs, moreover, offers only limited grounds for optimism. Even using as evidence of effective family planning the ability of a national population to achieve and maintain a crude birthrate of 25 or below, it appears that only about a third of the world's population is successfully limiting its fertility and for the most part, did so before the oral and intrauterine contraceptives were available. In other words, two-thirds of the world's population is not yet effectively limiting its fertility, and for a good proportion of them, there is little indication that they soon will.

Although acceptability and effectiveness of the new contraceptives has served as a stimulus to both private and public programs, such programs now exist in countries that include roughly 60 percent of the world's population, their effectiveness in lowering fertility may be questioned. Greeted with initial enthusiasm, these programs tend to peak and level off rather quickly, suggesting that they may be reaching only those couples who have already resolved to limit family size by one means or another. We do not yet have any clear evidence that population growth can be controlled by deliberate programs, in advance of those changes in social and economic conditions associated with low fertility in the developed countries. It is a sobering thought, as University of

A Qualitatively





Different Problem

by John L. Thomas, S.J., Ph.D.

Michigan demographer Ronald Freedman has recently noted, that abortion may still be the most widely used single method of family limitation in the world today. Whatever judgment may be passed on this practice considered by itself, one must admit that when used as the major means of lowering fertility, it is not indicative of rational family planning.

Because people in the industrial nations of the West have achieved effective family limitation, as well as wasteful economic overproduction, we might be tempted to conclude that they have solved their population problems satisfactorily. Yet the growing confusion, normlessness, frustration and irresponsibility presently characterizing their marriage and sexual relationships strongly suggest that they have gained security at the cost of significance. For the most part, the practice of family limitation has been introduced and widely adopted with little awareness of the need to make corresponding adjustments in existing sexual beliefs, attitudes and feelings. As a matter of fact, we still tend to regard population and sex as independent "givens," to be treated separately. Hence, we study population problems primarily in terms of numbers and resources, while our considerations of human sexuality are largely confined to its genital aspects.

Our failure to recognize a complex, reciprocal relationship between sex and population has led us to define our population problems far too narrowly. The comforting assumption that responsible family limitation would automatically follow increased contraceptive knowledge and industrialization is no longer tenable. Indeed, the observed reluctance of many couples in the developing countries to limit family size is not due to their indifference to hunger, sickness and suffering, but indicates that under present conditions, they can see no direct relationship between social or economic development and their traditional conceptions of sex, marriage, and human fulfillment.

Why have we been so slow to view population change in adequate perspective? I feel that several factors in the historical development of family limitation go far to explain both our past and present limitations in this regard. Throughout much of the past in the Western World, at least, it was uniformly assumed that the average family could provide for all the children it was privileged to produce. Because infant

mortality rates remained high, and the economic costs of raising children were relatively minor, most couples apparently felt little inclination to question the assumed order of nature by directly limiting the size of their families.

Evidence that traditional attitudes toward family limitation were undergoing change first appeared around the end of the 16th Century. This new trend grew steadily during subsequent centuries as various scientific and social developments generated increasing concern with maternal and infant health care, social mobility, higher standards of living, the status of women, and the formal education of children. Beginning first among the upper classes and then diffusing downward, attitudes and knowledge relating to various methods of family limitation, formerly confined largely to social deviants or members of the demimonde, gradually became an integral element of Western family culture.

It is relevant to note that the initial diffusion and widespread acceptance of such attitudes and practices took place without benefit of clergy, significant secular leadership or well-organized propaganda. Throughout the 18th and 19th Centuries, family limitation was regarded as a serious threat to economic growth, national power, and long-established sexual mores. Even after the turn of this century, when birth control gained some measure of respectability by developing into an organized social movement, the atmosphere of disapproval, contention and conflict remained. As a result, little effort was made to analyze the true nature and underlying causes that the revolutionary shift in family and sexual mores implied. Until the depression of the 1930's, attention was focused primarily on the promotion or defeat of relatively short-range, segmented programs of fertility control among the lower socio-economic classes.

Thus, the traditional interpretations of sex, love and marriage no longer supplied the meaningful, conceptual framework within which effective ways of meeting the changed exigencies of parenthood, under contemporary conditions, could be developed. Furthermore, religious and secular thinkers failed to recognize this fact, and thereby, forced couples, facing the non-postponable daily needs of family life, to rely on their own *ad hoc* solutions. The means they used were necessarily related to available resources—technical, psychological, social and spiritual. History reveals that delayed marriages, celibacy, marital continence, contraception, sterilization, abortion, and even veiled infanticide—conveniently disguised under the cloak of child-abandonment, as during the 18th and 19th Centuries in Europe—all came to be used more or less effectively and extensively at some time.

Recently, we have made some progress in developing more satisfactory means of birth control, as well as in clarifying our stance regarding public assistance programs, but we have made little advance in understanding the real challenge of population change. Because we fail to see an essential relationship between sex and population, we continue to regard the present crisis as little more than a quantitatively enlarged version of the old human problem of balancing numbers and resources. In reality, it is a qualitatively different problem, generated under markedly changed conditions, that requires a new frame of reference for its ultimate solution.

Population means people—men, women and children endowed with the dignity of human persons and seeking some measure of happiness and fulfillment in life. Since the quality of being "sexed" is a basic human attribute—man is

primarily a sexed person—his sexual beliefs, attitudes and feelings, together with the culturally defined and socially acceptable relationships designed to implement them, necessarily constitute a significant element in his conception of happiness and fulfillment. More specifically, as anthropologists assure us, man's concern with reproduction, considered in terms both of personal fulfillment and social continuity, constitutes one of the major wellsprings of motivation and organization in all enduring human societies. Changes that directly affect this concern are bound to have far-reaching personal and social repercussions. In fact, as we can learn from the history of the demographic transition in the West, and from our brief experience in some of the developing countries, if such changes are to prove acceptable, or are to be accepted without causing frustration and disorganization, they must be accompanied by a thorough reinterpretation of existing sexual beliefs, attitudes and feelings, as well as by a carefully integrated restructuring of all relevant social relationships. In the practical order, this means that once a society institutionalizes conditions that require the continued control and limitation of population, it must reformulate its conceptions of the nature and functions of sexuality.





The present situation constitutes a critically new challenge to the human species, for population touches the very foundations of society, of personal fulfillment and continuity, and consequently, of essential systems of human motivation and organization. In order to meet this challenge, we must find the answers to an entirely new set of questions.

Is there an essential relationship between the humanly fulfilling use of sex, stable marriage and responsible parenthood? Will the new contraceptive techniques that "thoroughly separate sexual enjoyment from reproduction" also separate sex from responsibility, inasmuch as appetite satisfaction need no longer lead to any consequences? Shared responsibility for children has long been one of the major concerns binding husband and wife together; how will limited procreation affect this relationship? To what extent will the separation of sexual enjoyment from reproduction affect traditional attitudes and practices relating to premarital and extramarital sexual relations? What solutions can be developed for the increasing ambivalence of women's roles under contemporary conditions of sexual permissiveness, limited motherhood and increased longevity? How shall we deal with the

apparently increasing number of individuals who seem neither capable nor willing to exercise responsibility in the use of their reproductive faculties?

In other words, we must develop a more adequate understanding of man's sexuality in all its human wholeness and totality if we are to deal with population effectively. Human sexuality is a complex phenomenon, not only because it implies disjunctive though complementary personal attributes (dual sexuality) and consequently couple-centered fulfillment, but also because one of the functions with which it is associated, the bearing and rearing of children, is closely related to group continuity and survival. Considered from the viewpoint of the individual, therefore, sex constitutes a way of being and relating to the world and to others. As a way of being, it is reflected at all levels of the person's activity. As a way of relating, it is reflected in the sexually specific, culturally defined statuses and roles in terms of which boys and girls in a given society are trained, and which later determine their relative social positions, accepted areas of action, and permitted aspirational goals. Considered from the viewpoint of society, sex appears as the basis of that primary human community of life and love, designed to provide for the mutual development and happiness of the couple, the orderly fulfillment of their sexually associated needs, and the adequate recruitment of new members through responsible parenthood.

All known societies have experienced difficulty in developing an adequately comprehensive view of human sexuality and devising appropriate systems for its expression. As members of a pluralist society, we face special difficulties in this regard, for our view of sex is ultimately rooted in our conception of the human person; and our programs of action, to the extent that they are rational, are based on premises of human values, as well as upon facts. Nevertheless, I feel we can agree on several essential starting-points: the value of stable marriage, responsible parenthood, and respect for the dignity of the human person. Programs of population control must take all these factors into consideration or they will cease to be human.

As Aldous Huxley was at pains to point out in his *Brave New World Revisited*, dehumanized solutions are not as far-fetched as they may initially appear. When serious social problems are ignored until they reach a critical stage, ethical shortcuts and remedial quackery can become tempting options, particularly for the impatient promoters of The Great Society.

While moving toward a fuller recognition of the appalling urgency of dealing with the immediate problems associated with rapid population growth and limited available resources, we must be continually aware that facile solutions, based upon a superficial analysis of the real human issues involved, may easily emerge as the reality so gloomily outlined in Orwell's *Nineteen Eighty-Four*, Huxley's *Brave New World* and Burgess' *The Wanting Seed*.

Father Thomas is a research associate at the Cambridge Center for Social Studies and on the board of directors, Sex Information and Education Council of the United States.

Religion Politics and Population

Time for a Change

by Ralph B. Potter, Jr., Th.D.

It is common knowledge that the world confronts some sort of "population problem." The exact nature and dimension of the problem are matters of continuing debate. But whatever the population problem is, and wherever it is, our nation is now pledged to do something about it.

The process of mobilizing the diverse resources needed to deal with the population problem has gained pace. At first there were lonely prophets. Then voluntary associations were formed to publicize the issues. Well-endowed foundations became concerned. University research centers were established. Specialists were recruited and trained. Conferences were held with greater frequency and enjoyed more extensive notice in the press. Through the work of private agencies the public learned of "the population explosion."

But in the midst of this exploding concern, the government took no official notice of the issue. In 1959, President Eisenhower, upon receiving the recommendation of the Draper Committee that the United States assist other nations, upon request, in the formulation of plans designed to deal with the problem of rapid population growth, replied, "I cannot imagine anything more emphatically a subject that is not a proper political or governmental activity or function or responsibility. That's not our business."

Four years later, in expressing the reversal of his position, President Eisenhower provided an explanation of his original reluctance. "When I was President I opposed the use of Federal funds to provide birth-control information to countries we were aiding, because I felt this would violate the deepest religious convictions of large groups of taxpayers."

It is no secret that these sensitive religious convictions were supposed by political leaders to belong to the large number of taxpayers and voters who are members of the Roman Catholic Church. The leadership of this powerful segment of the American public is centered in a well-disciplined hierarchy resolutely opposed to many of the means most frequently

Professor Potter is assistant professor of social ethics, Harvard Divinity School; and a member of the Center for Population Studies, Harvard School of Public Health.



**In considering population policies,
especially those relating to governmental support
of family planning programs, politicians
have been made timid by fear of politically effective Roman
Catholic opposition. Their fears should now be moderated.
The danger, frequently exaggerated and
employed as an excuse for inaction, has now diminished.**

proposed to combat rapid population growth. It has been cast in the role of villain by those who contend for more extensive programs of birth control. Among such advocates, most veterans of local and national skirmishes over legislation regarding birth control and related subjects can elaborate stories of what they consider to be abuses of the conditions of domestic peace and harmony within a pluralistic society.

The accusations lodged against Roman Catholic leaders are, however, undergoing a revealing change. They are more likely now to be portrayed by detractors not as wielders of brute political power but as calculating manipulators seeking to accomplish their perennial purposes by new and devious pretensions and ploys. On November 14, 1966, the Roman Catholic Bishops in the United States issued a statement containing the undocumented charge that "government activities increasingly seek aggressively to persuade and even coerce the underprivileged to practice birth control." Resort to this charge, in the presence of well-defined administrative regulations prohibiting such pressure, and in the absence of evidence of specific abuses, suggested to many that the Bishops were less intent upon defending the poor than upon finding a new vehicle for carrying on their war against birth control.

The negative reaction to the Bishops' statement was so immediate and overwhelming as to suggest a re-evaluation of a two-fold myth, hitherto embraced both by opponents and by partisans of the Roman Catholic position on birth control. The myth extravagantly overestimates the influence the Roman Catholic Church has been or will be able to exert upon population policies. Invoked by President Eisenhower in defense of his inaction on population matters, it affirms that, with respect to the past, Roman Catholic opposition has been a main cause of delay in the defining and implementing of an effective public policy in the field of population. And, in the future, overcoming or removal of barriers created by

Roman Catholic obstinacy will mark the end of controversy and frustration with regard to population programs. Both elements of the myth distort reality.

It is an illusion that Roman Catholic political power has been so overbearing that it could block the implementation of population policies enthusiastically supported by a national administration. The illusion seems to be nourished by an anticlerical wing of the birth control movement and assumed even by liberal Roman Catholic advocates of change. In June, 1966, an international group of six hundred Roman Catholic intellectuals, in appealing to the magisterium of the Church for liberalization of its teaching on birth control, warned that "The Church cannot take the responsibility before history of minimizing one of the main problems which humanity must face, let alone of constituting an obstacle to general research into real solutions . . ." Pope Paul VI, addressing the Italian Society of Obstetrics and Gynecology, October 29, 1966, alluded to his pending decision touching upon the morality of "artificial" means of birth control and announced ". . . I must defer it still for some time." *The New York Times* report suggested the burden of the Pope: "It was a 'most vast question, most delicate question,' he told the doctors today and one on which he knew the world awaited his 'decisive word.'"

Pope Paul was indulging in papal hyperbole. With respect to the implementation of birth control policies, it is clear that the world is not awaiting his word. Moreover, in light of the worldwide scope of the population problem, when that long delayed word is uttered, it will hardly be "decisive."

The Pope's word, be it for or against the liberalization of the ban on contraception, certainly will not be decisive in nations with predominantly non-Christian populations. The family planning programs presently operating in India, Pakistan, Ceylon, Malaysia and Singapore, Thailand, Mainland China, Taiwan, Japan, South Korea, Hong Kong, Tunisia,

In reflecting upon the moral issues
inevitably involved, commentators have been preoccupied
with questions defined as "moral problems" by the
Roman Catholic custodians of one particular tradition of
moral thought. Their focus
needs to be expanded to accommodate a
broader dialogue encompassing alternative moral perspectives.

Turkey and the United Arab Republic may have been tardy, but their tardiness can hardly be ascribed to fears of political reprisals by indignant Roman Catholics.

Nor is Catholic teaching decisive in those Christian nations of the West which are overwhelmingly Protestant. The Scandinavian lands have not waited before evolving domestic facilities or extending technical assistance to Asian nations seeking to develop family planning programs.

The United States, a nation with a large Roman Catholic minority, has been delayed but not thwarted in its effort to assist other nations, upon request, and to make birth control information and devices available to its own citizenry through tax-supported agencies. The Department of Health, Education, and Welfare, the Department of the Interior, the Department of Defense, and the Office of Economic Opportunity, are all engaged in programs involving the distribution of birth control information and/or devices to particular segments of the American public. The Agency for International Development does not distribute contraceptive devices abroad or finance the purchase of machinery for their production. But in the Fiscal Year 1966, it contributed \$5.5 million towards the support of family planning programs in Pakistan, Turkey, South Korea, Jamaica, and, significantly, in the predominantly Roman Catholic Latin American nations of Brazil, Costa Rica, Ecuador, El Salvador, and Honduras. Most of the Federal programs, national and international, have been challenged by Roman Catholic critics. None has been blocked. Each is expanding.

Even among the constituency of the Roman Catholic Church itself, it is evident that many couples are not awaiting the "decisive word" of the Pope before instituting their own programs of population control. Studies conducted by Charles Westoff of Princeton University and Norman Ryder of the University of Wisconsin, indicate that the proportion of Roman Catholic wives complying with the Church's ban on

"artificial means" of contraception has declined from seventy percent in 1955, to sixty-two percent in 1960, and to forty-seven percent in 1965.

It is unlikely that the American Bishops will be able to rally laymen for a concerted, sustained attack upon established public policies. A Gallup Poll, taken in October, 1965, showed that a majority of the nation's Roman Catholic citizens support the concept of Federal aid for family planning clinics.

In order to portray Roman Catholics as the villains who prevented or delayed an appropriate response to the population crisis, it is necessary first to suppress the memory that the threat of overpopulation is a new problem that many non-Catholic authorities failed to recognize quickly, and secondly, to imply that the only appropriate response would have consisted of strenuous governmental encouragement of forms of birth prevention objectionable to Roman Catholic conscience.

President Eisenhower's explanation of his embarrassing inaction upon an issue, now revealed to be more crucial than he supposed, is too simple. It should be admitted that he, along with many others, did not appreciate the import of the unfolding demographic facts. Surely, an heroic general, perceiving the existence of a severe threat to humanity, would not be deterred from taking strenuous action, especially in his second and final term, by worrying over the unpredictable political effects of the moral discomfort of an uncertain segment of one minority within the threatened populace. Likewise, we cannot suppose that Congressmen from districts with few Roman Catholic voters would be so easily dissuaded from broaching a "taboo subject" if they really perceived the depth of the population crisis.

Roman Catholic opposition cannot stand as the single and adequate explanation of failure to act upon the population

The Preconditions of Effective Action

problem prior to 1960. Many things that could have been done were not done, things to which Roman Catholics would have posed no objections. Roman Catholic sensibilities would not have prevented an earlier administration from expanding efforts aimed at increasing world food supplies, or conserving natural resources, or combating pollution, or collecting more reliable demographic information, or reducing infant mortality, or exploring the mysteries of reproductive physiology.

President Eisenhower's affirmation that "This government will not, as long as I am here, have a positive political doctrine in its program that has to do with this problem of birth control. That's not our business," could better be traced not to fear or respect for the implications of Roman Catholic moral theology, but to the predisposition created by his own *laissez-faire* political philosophy which excluded the government from the realm in which electric power is generated as surely as from the realm in which human life is generated.

The first significant steps toward Federal action came under the Roman Catholic President, John F. Kennedy, who combined a sense of what the government could do with an appreciation of what the Church could not do. He more accurately assessed the limits of the reach of potential Roman Catholic power. When action finally was seen to be needed, it was taken not through well-publicized legislative action but rather, through administrative decisions taken within the nearly impenetrable recesses of bureaucratic agencies. Thus, in April, 1966, David Bell, Director of the Agency for International Development, was pressed by the chairman of a subcommittee of the House Appropriations Committee to indicate the authorization under which his agency was expending five and a half million dollars to support family planning services abroad. Bell, to the apparent surprise of Congressman Passman, cited Section 211 of the Foreign Assistance Act:

The President is authorized to furnish assistance on such terms and conditions as he may determine in order to promote the economic development of less developed friendly countries and areas with emphasis upon assisting the development of human resources through such means and programs of technical cooperation and development . . .

Thereupon, the following dialogue ensued:

MR. PASSMAN: That section does not authorize birth control or population explosion control programs.

MR. BELL: It says economic development with emphasis upon assisting the development of human resources. This is the authority under which we assist in the field of education, in the field of transportation, of public administration, health including the population family planning.

MR. PASSMAN: This is general authority?

MR. BELL: That is right.

MR. PASSMAN: Under this language you can do just about anything you want to.

MR. BELL: Which contributes to this end.

It would seem, that within the Federal Government, "where there's a will there's a way." Congressman Zablocki discovered this when he objected, to no avail, that, "These programs have not been authorized by Congress, but simply established by bureaucratic fiat within the Agency itself." It is, therefore, exceedingly difficult to block a program considered indispensable by a strong administration.

Why then didn't the Federal Government act sooner? The causes of delay cannot be compressed into a conspiracy theory, grounded upon observation of Roman Catholic intransigence in the political realm. This is true even if we focus only upon the narrow issue of Federal grants in support of family planning programs here and abroad, and leave aside all the less controversial elements of a comprehensive population policy that might have been undertaken sooner. The threat of political retaliation by Roman Catholics cannot suffice as an explanation for the retarded pace of public programs of birth control.

Until recent years, adequate backing for Federal action could not be ensured partly because many not opposed to the concept of birth control itself nevertheless considered it to be a concern beyond the legitimate range of government. Before the threatening implications of the present demographic facts for the social and economic well-being of human society became so clear, many persons now in support of existing programs could claim that, no matter what the benefits of birth control for the individual family unit might be, there was, according to their political philosophy, no proportionate grave cause capable of justifying the entrance of governmental power into the intimate private sphere of family planning. Now, a new demographic situation demands modification of the moral definition of the issue. A powerful new argument of "clear and present danger" to the common good can now be made. Moreover, the popular antibirth control argument, linking nationalism and natalism, has been rendered ineffective.

Some may be surprised to be reminded how recently it was that many non-Catholics remained morally and medically dubious about the practice of birth control itself. In 1931 a statement by the Committee on Marriage and Home of the Federal Council of Churches observed that "Birth control is nearing the status of a recognized procedure in preventive and curative medicine. Knowledge of contraceptives is also widely disseminated, and the question of their use has become one of great social importance. The public therefore has a right to expect guidance from the church on the moral aspects." Such guidance was offered: "a majority of the committee holds that the careful and restrained use of contraceptives by married people is valid and moral." Upon making this positive declaration, which shocked many churchmen, the committee went on to acknowledge the "... widespread doubt among Christian people of the morality of the use of contraceptives, and the scruples experienced by many in making use of them . . ."

Denominational bodies lagged behind the pioneering committee of the Federal Council of Churches in reconsidering the strong condemnation of birth control that was virtually universal in official church statements in the opening decades of the twentieth century. Orthodox Jews continue to express qualms concerning the morality of birth control. Eastern Orthodox churches still remain more hostile to the idea of family planning than the Roman Catholic Church. All other major Protestant churches in the United States, however, now condone or, in many cases, encourage the practice of birth control as an aspect of responsible parenthood. At the same time, all still maintain a firm pro-fertility emphasis, reasserting the expectation that couples

will not permanently refuse the privilege of parenthood.

The lengthy process of building public support and an institutional base necessary to undergird a broad Federal program in the field of family planning was retarded not only by the active opposition of Roman Catholics to birth control, but also by the passive indifference of broad segments of the public within which vague moral and medical doubts lingered on. When quizzed by pollsters, such respondents might volunteer no unfavorable judgment upon birth control. But neither would they volunteer time and money to expand privately sponsored programs or the political energy to overcome their fellow citizens' strong opposition to governmental involvement in family planning projects.

Before birth control programs could receive the support necessary to undergird Federal participation, it was necessary to assuage fears of medical dangers and to bring the practice of family planning firmly within the professional definition of sound medical practice.

In an earlier era, most physicians, like most theologians, were opposed to birth control. Judgments concerning its desirability involve estimates of medical effects and also implicit beliefs concerning the nature and destiny of man. Is birth control, then, a matter that falls within the competence of the physician or of the priest? The boundaries of these overlapping jurisdictions may vary through time and within different groups.

The implementation of Federal programs had to await public acknowledgement of the extended boundary of competence defined by the medical profession. Birth control has increasingly been redefined as predominantly a medical question and has thus been removed more and more from the competence of the priest. It has come to rest within the sphere governed by the judgment of experts in the field of medicine. This medical jurisdiction over a boundary issue, involving inevitable judgments upon profound moral questions, may prove to be only temporary. In recent years the prestige of the medical profession has provided the leverage necessary for change. But in relation to such issues, which are not self-evidently or exclusively "medical," the general public retains a residual sovereignty. Sovereign laymen may someday challenge the current definition of what constitutes "a medical question," or they may decide that nonmedical considerations are to be given greater weight when reflecting upon decisions concerning birth control.

At present, however, an increasingly large segment of the public is content to view birth control as "a medical issue" to be entrusted to the professional jurisdiction of men trained in medicine. Family planning has found its way into the programs of Federal agencies not as a social welfare measure, not as a means of implementing a civil right, nor even as a weapon in the battle against the population explosion, but as an element of "sound medical practice." The dialogue, recorded above, between David Bell and Congressman Passman, hints at the political importance of professional norms defining the realm of competence claimed by authorities on "health." The point is illustrated clearly in the response of John W. Gardner, Secretary of Health, Education, and Welfare, to the proposed legislation, Senate Bill 2993, which was designed "To provide Federal financial assistance to public agencies and to private, nonprofit organizations to enable them to carry on comprehensive family planning programs." In May, 1966, Mr. Gardner wrote to Lister Hill of Alabama,

Chairman of the Senate Committee on Labor and Public Welfare, saying, "We strongly endorse the basic objective of the bill—i.e., to make comprehensive voluntary family planning programs available to those who would not otherwise have access thereto—but we already have, and are increasingly using, such authority in that respect as we believe is needed. . . . We therefore cannot recommend enactment of S. 2993 at this time." With the same curiosity that moved Mr. Passman, observers might ask, "Where did Congress give authorization for such programs?" Mr. Gardner explains that,

Our support for the provision of family planning services is given, as we think it should preferably be, within the framework of broader programs of grants for health services. The principal major vehicle for that purpose is title V of the Social Security Act, especially part 1, which provides for grants on a formula basis for State programs of maternal and child health services, and the recently enacted paragraph 531 which provides for special project grants for maternity and infant care.

For such an approach to work, it is necessary for the medical profession to confirm that the provision of family planning services is an indispensable element of maternal and child health programs. When such an approach does work, members of the medical profession serve, perhaps unwittingly, as agents of social change. Whether they mean to or not, physicians here do the work of political philosophers, moralists and statesmen, in shaping the common life. In the performance of such tasks they should not expect to remain above the scrutiny of their fellow citizens or invulnerable to criticism posed by other servants of the common good.

For many years, Roman Catholic forces held the line against direct legislative enactment by brandishing their presumed power on the political battleground. In the lengthy struggle over governmental support of family planning programs, they were finally outflanked and defeated. The decisive battles ultimately were fought on a field not accessible to the type of power available to the Bishops. The telling weapon was the widespread acceptance of the autonomy of the medical profession as a discipline not under the tutelage of theological authority.

Some might be tempted by this account to conclude that the encouragement of an anticlerical, secularist mentality would be an effective tactic for those who continue to seek a more aggressive attack upon population problems. To open the way to further action perhaps we should subvert religious loyalties and drive ecclesiastical spokesmen, shorn of their popular following, out of the political arena.

It would be foolish to identify concern for population control with an antireligious ideology. To do so would be to assume unnecessary burdens and risks. First, a thoroughgoing assault upon religion per se would tend to strengthen the resistance to change on the part of those with strong religious identities who may, at the moment, be on the verge of moderating particular teachings. Second, some highly desirable impulses might be weakened within society if religious life suffered atrophy. Third, a potentially strong ally might be crippled. Religious teachings do undergo change. Consider the example of the Episcopal Church. In 1908 and again in 1920, the Lambeth Conference of Anglican Bishops sharply condemned the practice of birth control. In 1930, the Bishops granted grudging permission, "if there is a morally sound reason for avoiding abstinence." The Lambeth

Conference of 1958 marked the acceptance of family planning "in such ways as are mutually acceptable to husband and wife in Christian conscience." In November, 1966, it was the presiding Bishop of the Episcopal Church who spoke out immediately in response to the Roman Catholic Bishops' attack upon Federal family planning projects, and revealed that his denomination would sizably increase its support to the family planning projects it was already sponsoring.

The power of religious sentiment, which moves believers at the deepest level, need not be forfeited. It may be enlisted in the service of responsible action for population control through a timely blend of dialogue and patience. With respect to the Roman Catholic Church, it may now be the time for patience, the time for a moratorium within which the evolution of moral thought may progress. But outsiders' fervent appeals to the Pope, urging him to modify the teaching of the Church in order to spare the world from hunger, may be counterproductive. They may strengthen his unwillingness to assume the appearance of accommodating timeless moral truth to timely social needs.

Non-Catholics should not minimize or oversimplify the problems confronting the Church. It is not ignorance of demographic facts that constitutes the barrier to easy and immediate change in the Church's teaching. Demographic data are available to the Pope. Competent Catholic and non-Catholic demographers should, of course, continue to supplement and correct their findings so that accurate information may be brought to the attention of Pope Paul. But the role that such technical information should play in shaping the teaching of the Church is itself an issue of moral theology, an issue which must be decided in the light of many theological and ecclesiological considerations, the weight of which can only be determined by Roman Catholics themselves.

It is certainly in order for any competent authority to challenge and correct underlying factual premises. An editorial in the Vatican newspaper, *L'Osservatore Romano*, November 4, 1966, is reported by *The New York Times* to have "again cast doubt on the validity of scientific warnings against the imminent danger of overpopulation of the earth." Those in command of relevant scientific information ought to serve the truth which Catholics praise by calling counter-evidence to the attention of the Pope.

But superior scientific knowledge cannot suffice to overcome the causes of Pope Paul's hesitancy. He must be concerned for the preservation of the credible authority of the magisterium of the Church. The burden of a broad, long-range concern for the integrity of an institution considered indispensable for the fulfillment of a divine commission is evident in Pope Paul's comment upon the factual report submitted by his own study commission:

... it seems to us, [the conclusions] cannot be considered definitive for the fact that they present grave implications with other questions of doctrinal, pastoral and social order, which cannot be isolated or put aside, but which demand a logical consideration in the context of the question under study.

The magnificence of the authority claimed for the present teaching of the Church makes it exceedingly difficult to change. At stake is not only institutional credibility, but seemingly, the entire philosophical system of natural law

upon which the Church has based its social thought for centuries. A report in the Boston *Pilot* of remarks by Monsignor Fausto Vallaine, head of the Holy See's press office, illustrates the present need for extraordinary philosophical subtlety:

Noting that the Church considers the prohibition against artificial birth control as a dictate of the natural law, he said that "it is obvious that the natural law cannot become non-natural. But at the same time it may be possible to throw new light on precisely what the natural law teaches on this subject."

One can suppose that modification of the Church's teaching regarding birth control, widely desired within and without the Church, might come about sooner if non-Catholics would simply look the other way so that Roman Catholics, with proper modesty, might patch up or shed those portions of their philosophical garments they may now consider to be outworn.

Even with regard to domestic issues within the United States there is no need for those eager to stimulate more aggressive action on population issues to expend their energies in heated polemics against the beleaguered members of the rear guard who composed the American Bishop's protest of November, 1966. Liberal forces within the Roman Catholic Church can adequately counteract reactionary ambitions. *The National Catholic Reporter*, a liberal weekly, exhibited the independence of growing segments of the Roman Catholic constituency in commenting that the Bishops' assault against family planning projects "has to be classified as a disaster." Within the nation, Catholic leadership has lost its battle against governmental involvement in family planning programs. Within the Roman Catholic community, it has lost its power to marshal effective political force upon issues pertaining to family planning. Even if the Church proves incapable of modifying its explicit teaching, there seems little doubt the Roman Catholic laymen will continue to modify their practice.

Now, at a time when the President of the United States makes public and frequent affirmations of the importance of population control, when governmental expenditures on projects related to family planning are rapidly increasing, when the Congress has, in the Food for Peace legislation, given explicit authorization for support of family planning programs abroad, there is no present need either to alienate or to woo Roman Catholic opinion. The forces mobilized by private agencies are being augmented through governmental action. The attack upon the population problem will proceed and expand with or without Roman Catholic support. The question at stake in the Vatican's reflection upon the report of the Commission for the Study of the Problems of Population, Family and Birth is not whether Pope Paul will suddenly save the world from the peril of overpopulation by uttering a "decisive word," but whether his Church will be able to salvage a measure of prestige as the governments of the world march with a quickening pace towards solutions which may or may not be pleasing to Roman Catholic moral theologians. The decisive intellectual battles, in which it has been decided that strong measures must be taken in response to the population problem, have already taken place. In their wake it is the infallible Pope who must discover a way to avoid both

the theological disillusionment of the overly pious and the personal despair of the overly prolific. His decision may have a profound effect upon the Roman Catholic Church as an institution. But, in spite of its admitted relevance to the pace of the development of population programs in Latin America, on a worldwide basis the Pope's decision will be of only marginal significance for the solution of the population problem.

In the past the polemics of population policy have been determined to an excessive degree by the necessity of responding to objections anticipated from Roman Catholic sources. We must end such polarization and prepare for a broader, more complex discussion of a wider range of issues, a discussion in which surprising new coalitions and oppositions may appear. In bearing the brunt of controversy, Roman Catholics have been able, to date, to set the terms and topics of debate. It has appeared to some that there would be no sharp disagreement concerning population matters were it not for the idiosyncrasies of Roman Catholic conscience. But this is not so. If all Roman Catholics were suddenly to vanish, or if their scruples were to be eased, there would still be new occasions for controversy. Moral concern with the questions involved in population policy is not limited to Roman Catholics.

Policies may be proposed which offend non-Catholic Christians, or non-Christian believers, or nonbelieving humanists, or others. No one group exercises a monopoly upon moral concern. Each group preserves a particular form of ethical sensitivity. The contest has never been between "the moral view" of birth control and "the nonmoral view." Rather, differing accounts of the current demands of true morality have been pitted against one another. Those who have led the drive to make birth control information and devices available to all citizens have been guided by their own well-explicated moral convictions concerning the value of effective freedom of choice with regard to the determination of family size. Moralists of other persuasions may criticize and disagree with such a position, but they ought not to pretend that it is a "nonmoral view" simply because it rests on a different account of the nature and outcome of moral reasoning. On this, or on other issues, we must attend to a variety of competing moral interpretations. The Roman Catholic view must be examined as one moral view among many moral views, one which, like every other, must strive to commend itself to the broader public upon its own merits in a free market place of ideas sponsored by a pluralistic society. Widespread irritation over Roman Catholic hesitancy and recalcitrance should not be allowed to foreclose appreciation of the fundamental values the Church seeks to preserve. When released from the philosophical framework that imposes unreasonable demands, in the name of reason, and when proclaimed with less heroic defensiveness in a less polemical environment, the moral values underlying the Roman Catholic position will, in fact, commend themselves to men of humane sensitivity and good will.

It would be most unfortunate to allow ancient animosities and suspicions to prevent appropriate consideration of the complaints Roman Catholic critics lodge against various population policies. "Freedom to choose" has become the watchword of those who favor more aggressive efforts to make birth control knowledge and devices available to all. President Johnson expressed the underlying concern succinctly in his Special Message to Congress on Health and

Education, March 1, 1966:

We have a growing concern to foster the integrity of the family, and the opportunity for each child. It is essential that all families have access to information and services that will allow freedom to choose the number and spacing of their children within the dictates of individual conscience.

To make "freedom to choose" an actuality, knowledge and devices must be available.

But the obverse side of "freedom to choose" is suggested in the much-maligned Statement of the Roman Catholic Bishops: freedom to choose also includes the ability to reject the use of any and all forms of contraception. It is worth considering now whether, in fifteen, twenty-five, or fifty years, "freedom to choose" may emerge again as the motto of those who aspire to have a family with three, four, or five children, in opposition to the policies being strenuously promoted by their government through a variety of inducements and sanctions.

"Freedom to choose" is a slogan that can be made to cut for or against more extensive government involvement in population matters. There needs to be debate involving all segments of the public concerning the questions of what constitutes adequate justification for restrictions upon the right to bear offspring? and what means of restraint may be considered morally tolerable at various levels of danger to the public good? A broad and substantial debate transcending traditional battlelines is needed to clarify the philosophical grounds of public policy decisions which are of the utmost importance for individuals and for societies now and in the future. Legal and social philosophers, who are accustomed to the task of balancing conflicting demands for freedom, must be drawn deeper into the discussion.

There is simply no "nonmoral view" of population matters. Disputants may fail to employ the conventional vocabulary of traditional forms of moral discourse, but, nevertheless, whether they or their opponents fully recognize it or not, their views are grounded in moral assumptions concerning what ought and ought not to be done to, with, and for their fellow men. The theologian cannot evade or hide his assumptions regarding empirical facts. Neither can the purest scientist or ablest physician abstract himself and his professional judgments out of the realm in which human values are affirmed or denied, sacrificed or served.

When must the right of the community to protect itself against the threat of overpopulation take precedence over the right of the individual couple to bring children into the world? Are there sanctions which ought never to be brought upon a family to induce them to limit the number of their offspring? If it is legally and morally permissible to tinker with incentives built into the tax structure, is it permissible to tamper with the physiological bases of procreative powers through involuntary sterilization or other measures? If, as would doubtless be replied, stringent measures are appropriate in some circumstances but not in others, which responses are suitable in which situations? In matters of such import it would be well to ponder the possibilities carefully before the pressure of events creates a demand for unreflective action. Indeed, mental experimentation with scenarios, built upon apocalyptic visions of an overpopulated future, may have the prophylactic effect of inducing moderate action while there is time to avoid extreme measures.

WHAT I DO DOES MATTER

by Mary S. Calderone, M.D.

At long last, the many problems posed by the population increase are being universally identified. This is indeed gratifying, but the identification of problems does not automatically bring solutions. We naively used to believe that once we had "the pill," the population problem would be solved. We have had the pill for some time, and the problem is not being solved with sufficient rapidity.

Contraception alone cannot solve the population problem. In the past, our chief concern was the mass distribution of contraceptives. But now we are in a new phase, identifiable as the movement away from a mass approach, back towards the renewed consideration of the individual. In the face of superior methods that are close to 100% effective, how the husband and wife feel about family planning and birth control has become of great significance. The failure of one or two users of pills or intrauterine devices suddenly becomes of importance to us, not because of the effect on the birth rate, but because the availability of methods of such high effectiveness now makes it possible for us to express our special concern for the effect of this failure on a woman as an individual, and on her family.

This welcome concern for, and consideration of; the individual as an individual, provides us with new opportunities for broadening our basis of thinking. Contraception should never be an end in itself, nor even looked at primarily as a means of controlling population growth. It should be regarded as a servant to marriage, to the family, and therefore, to society.

Overpopulation has its roots within the individual family. There is always a time lag in an individual's awareness of the impact of his own individualistic patterns upon the social patterns within which he lives. There is always the thought, "what I do can't matter."

This fatalistic attitude, "what I do can't matter" will not change as long as we continue to think of population control merely in terms of *numbers*, and of family planning merely as family *limitation*. We shall not get very far until we conceive of, and place, family planning where it belongs—as an essential, but still only one part of total planning *for* the family.

In dealing with the family as a whole, we are quite literally dealing with a society's raw materials, upon whose quality, rather than quantity, directly depends the success of all future conquests by man. And, we are being forced to recognize by the evidence all too easily observable on every hand, that the family—the precious basic institution that has been the very foundation of our American society—is presently being subjected to the most powerfully disintegrative forces.

The term "population explosion" to me means not only numbers, but even more significantly, behavior—the explosive behavior of people crowded together, and forced to live under intolerable conditions. This is particularly true with our own people, who do not share with some other peoples of the earth, the kind of apathetic resignation that results from centuries of oppression and deprivation.

Our basic needs—space, quiet, privacy, work that is meaningful, rather than just a way to pass the time for earn-

ing money, a sense of worth to the community—are being denied to an enormous majority of us. Furthermore, the human is adapted to do best under conditions that assure him warm and rewarding relationships in his everyday contacts with fellow human beings; conditions that allow him to preserve his sense of himself and them as individuals. Due to sheer numbers, there is a loss of the sense of one's own identity that is permeating our adolescents and young people. In the face of crowding and growing competitiveness, the development of meaningful human relationships is being frustrated. The term for this is "alienation."

We are at a moment in man's history when, for the first time, he can totally separate his reproductivity from his sexuality. In the past, psychosexual difficulties could be blamed on cumbersome methods of contraception. But today, with the far less sexually obtrusive methods, the patient often is brought face to face with her own sexuality or that of her husband's; a confrontation that frequently results in anxiety or panic. Thus it is that medical practice must, as soon as possible, prepare itself to deal constructively and realistically with human sexuality as a health entity in and of itself. We have been living through the era of responsible parenthood; we must now enter the era of responsible sexuality.

Sexuality must be looked upon as a great creative force, to be applied to constructive purposes, not as something to be used by people in exploitation of each other, whether for commercial gain, in personal relationships, or as a problem to be controlled.

In my deepening contacts with young people, I sense their often desperate efforts to come to terms with their sexuality, in a world that appears to them to value sex solely as a commodity of considerable commercial worth. Quite inarticulately, they convey to me their gropings towards the concept that sex has a role other than this. No organization will serve their needs if it aligns itself with those who see contraception purely as a means of lowering the birth rate, avoiding unwanted pregnancies, or solving the population problem. This is a negative approach which does not take into account any spiritual drive upwards.

The young are exceedingly sensitive to implications these days: they will know when contraception is being offered out of true concern for poverty and deprivation, and when it is motivated by possible savings in welfare dollars. They will also identify those who are interested only in lowering birth-rates among minority groups.

I would suggest that we Americans are becoming a people passionate about non-essentials—"the latest" gadget, hair style, fashion, lipstick, deodorant, detergent, car. Passion is too great a human emotion to waste on anything that is not fundamental to human welfare. One of the reasons we are here today is that our forefathers were passionately committed to the concept of human freedom. But the behavior of many of our citizens, old and young, indicates that they have forgotten what our forefathers knew—that freedom is not freedom unless it includes responsibility. This is why we must learn to raise every young person to understand that "what I do does matter," in relation to sex and procreation.

To underline this, it will be well to direct our spirit of passionate commitment towards people themselves, rather than towards their numbers. This is especially true in the several, newly-created, governmental agencies designed specifically to deal with the manifold problems relating to population growth. We must plan *for* the American family if it is not to disintegrate completely. We must have as our ultimate goal the development of individuals, capable of carrying their own weight in society. We must support and reinforce those trends and influences in American life today which will develop children into individuals capable of making decisions that involve reason and self-restraint. And we must counteract those trends and influences that lead people to base their decisions on emotionalism, false values or self-indulgence. Only in this way can we safeguard the rights and privileges of those already born, and ensure a good place for those to be born.

Until society carries out its responsibilities to our young people, they will not grow up to be individuals capable of making responsible decisions about reproduction and sex. One such responsibility is to acquire and transmit to them the knowledge of how these two great gifts—reproduction and sexuality—can best be used in the service of man, woman, and family. We have the scientists, the social scientists, the money, and the know-how to accomplish this. But the machinery is yet to be set in motion.

One way to begin is to extend the sex education programs already in existence. I believe that today, sex education and education for responsible parenthood are part and parcel of the same thing. The regulation of conception is exceedingly complex. The mechanistic approach of handing out contraceptives on a mass basis, cannot possibly motivate people to limit their families. It would be a grossly inadequate and devaluating service to them, and to ourselves. And it will not solve the population problem.

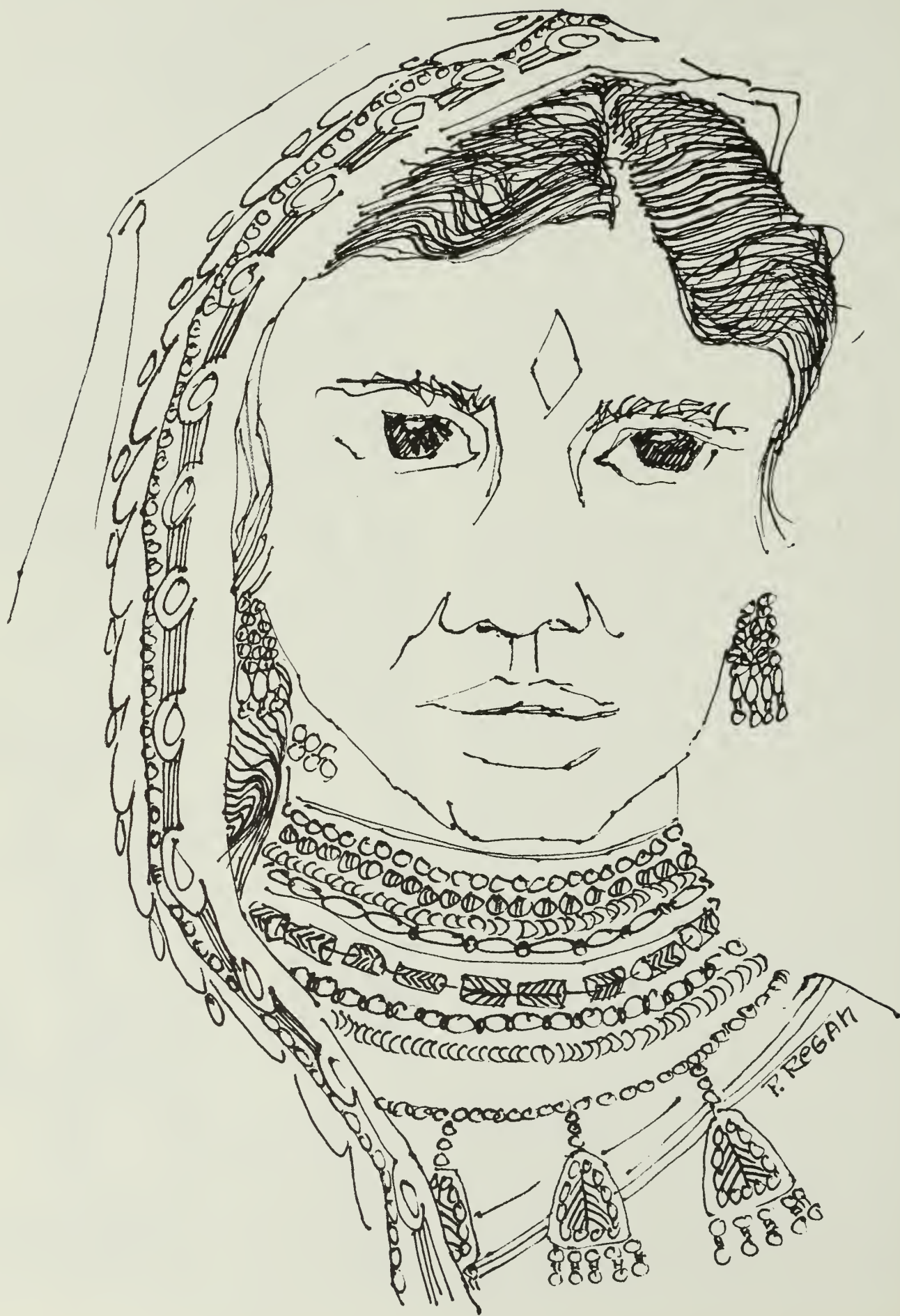
The only way that has ever been found to reach people is to care about them. Government, by its very impersonality, has a particular obligation to express in clear and concrete terms, that it does care about them. An orderly governmental framework that will correlate the findings of research in human reproduction, sexual behavior, and mental health, and then apply them in soundly-conceived and carefully-planned educational programs, will reach directly into the heart of every American family.

Until this time, only examples of sexual irresponsibility and reproductive profligacy have emanated from our shores. How we care for our own families, how we help them understand and make responsible decisions in their sexual and reproductive lives will be noted throughout the world.

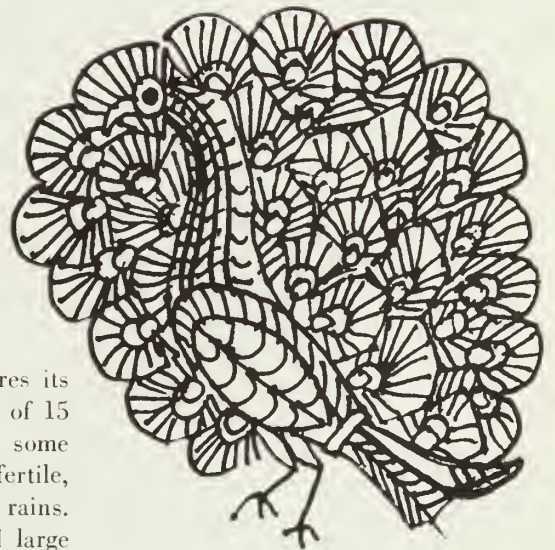
When every individual understands and accepts, "what I do *does* matter," the population problem may well be solved.

Dr. Calderone is executive director of the Sex Information and Education Council of the United States. SIECUS is a voluntary health organization committed to the concept that at a moment in man's history when he can totally separate his reproductivity from his sexuality, it is essential to his welfare and survival that he learn to use both in responsible fashion. Dr. Calderone was medical director of the Planned Parenthood Foundation of America from 1953-64.





The Khanna Study

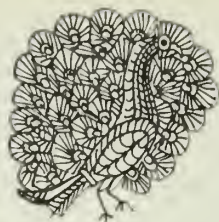


THE PUNJAB LIES northwest of Delhi, and shares its western border with West Pakistan. It is one of 15 states of the Indian Union, and in 1961, had some 20 million inhabitants. Most of its land is flat and fertile, watered each year by the usually abundant monsoon rains. For more than 3000 years this land has supported large populations; but extensive irrigation projects, developed during the last two centuries, have increased the ability of the land to support human life, and accordingly population numbers have responded.

In 1952 the Ministry of Health of the Government of India agreed with the Department of Epidemiology at the Harvard School of Public Health to join in a field study of India's population problem. The Christian Medical College at Ludhiana in the Punjab offered their cooperation. As a consequence, the study was located in eleven villages 10 to 25 miles from Ludhiana City. Headquarters were at the market town of Khanna.

One objective was to test how a contraceptive program, using simple methods, would change the birth rate in the few Indian villages chosen to be representative of wider areas. Another objective was to study factors influencing the frequency of births, deaths and migrations.

by John B. Wyon, M.D.
and
John E. Gordon, M.D.



By 1951, 70 percent of the people in the Punjab were rural. Most of them were of the Sikh religion, the balance were Hindus. They lived in villages, their houses tightly packed together, with one or two miles of cultivated fields separating individual communities. Numbers varied within each village from 150 to 3000. Half the families owned the land they cultivated, the others were either agricultural laborers, traders, or supplied various community services.

According to ancient custom, marriages were only contracted within widely dispersed groups called castes, determined by the male line of inheritance. Most men followed their caste profession, as farmer, carpenter, leather worker or some other occupation contributing to the predominantly agricultural way of life.

Households were often expanded to include the householder and his sons with their wives and children. Inheritance of property was strictly in the male line; all daughters left the village of their parents to marry, and with rare exceptions all women married. Every family desired sons to help earn a living for the household, particularly since most traction power depended on bullocks, camels and buffaloes, with other operations being performed by hand.

When field work started in 1953, the methods of contraception most highly regarded by the medical profession were the vaginal diaphragm or cervical cap, used with a spermicidal jelly. These methods required a physician or nurse to fit the device and to instruct the patient in its regular use. About 70 percent of the medical profession in India practiced in towns or cities, whereas 82 percent of the population lived in rural areas.

Because of these facts, the directors of the study reasoned that in order to develop a wide scale program for reduction of birth rates with the least delay, contraceptive methods should not be tied to a physician or nurse. This viewpoint gained support from evidence that in the last three or four generations birth rates in Europe had decreased by more than half, mainly by the practice of simple methods of contraception, which could be applied by the person concerned. One important step towards a practical program for India was to demonstrate that birth rates in rural regions had indeed declined by such means.

Who was Selected

The study staff decided to work within whole village populations, rather than with those who chose to come to a clinic or from randomly selected households. Behind that decision was the belief that to be successful the program must be a community effort.

Resident field workers visited all families in seven of the eleven villages each month. They made available contraceptive advice, supplied materials and recorded the occurrence of births, deaths, migrations and illnesses. Four other

villages, 25 miles away, formed a control population. They were observed, but were not offered help with contraceptive practice. A detailed comparison of the selected villages with other rural parts of the region indicated that inhabitants of the study areas were closely similar to the larger populations of the administrative District and State of which they formed a part.

Field Method

The foundation of the field method was a resident staff based in the study villages making regular visits to each household. For nine months, two physicians, a man and a woman, together with a public health nurse, worked in one village to learn and evaluate the field techniques to be followed for the next five years. In subsequent stages of the study, they trained other physicians to assist them as supervisors, and non-medically qualified persons to perform most of the routine visits.

These preliminary stages lasted three years. Observations in the test population of 8000 and in the control of 4000 were continued for the next four years. The study staff maintained close cooperation with the leaders and people of each study village and with local officials and medical practitioners.

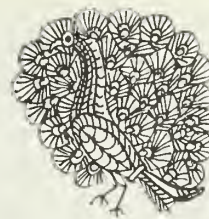
Senior male staff first met with the village leaders. The next step of identifying each household and person brought the staff into contact with almost every family in the village. A woman physician and the local non-medical staff member visited each wife of childbearing age to offer contraceptive advice and materials. A male physician and his male colleague visited husbands for the same purpose.

Thereafter the staff paid monthly visits to each household to provide a follow-up for the contraceptive program, and to record menstrual dates and information about lactation. In half of the villages they obtained details of child-feeding. Both a man and a woman physician visited each village once a week to meet anyone reporting difficulties with contraceptive practice, to investigate causes of deaths and to identify illnesses. The staff provided simple medical care on request, and each year they checked the census.

Regular meetings between the senior staff and an advisory committee kept state and central government officials and other interested groups informed of progress of the study.

Contraceptive Methods

For fifteen months the staff made available five methods of contraception for the villagers of Chakohi. This provided the information on which particular contraceptive method was most acceptable to the 1200 people of the village. Vaginal foam tablets were the choice. Withdrawal and a form of rhythm method were already known and sometimes practiced.



A cotton pad to be used with a contraceptive paste or with salt solution was tried, but soon discarded. Condoms were not offered because the Indian Ministry of Health in 1953, questioned the suitability of mechanical methods of contraception for rural regions.

This study was designed before oral contraceptives and intrauterine devices had been developed. These methods are an unquestioned advance in techniques of contraception. An estimated 4 million women in the United States are now using the oral method, and it seems equally popular in European nations. Intrauterine devices are widely employed by Asian women. Recent totals used are: Taiwan 200,000; Korea 350,000; India 1 million. Almost 1 million vasectomies have been performed in India alone. However, measurement of their effect on the birth rate of Asian and other populations has not yet proved that birth rates are declining to anything like the desired 50 percent.

Findings from the Study

The intensive effort in the program for contraception resulted in no definite change in the crude birth rate of the region during the four years of observation. No significant differences in birth rates were detected either within the test population itself—comparing early and late years of the study—or between the test and control populations.

All couples of childbearing age in the test population, nearly 1000, were visited each month. A half never reported practice of contraception. One-fourth reported practice for less than a year, and about the same number for 12 months or more. A considerable proportion of women were trying to conceive.

At any point of time during these years, about 500 wives were menstruating, and of these, approximately a third reported that they were practicing contraception.

The response to the program indicated that more than half the couples had no strong objection to practicing contraception. Then why was there no change in the birth rate? Was the method of contraception wholly ineffective as practiced by this population, or did the new methods of contraception substitute for some procedure practiced before the study started?

A measurable delay in conception among couples reporting contraceptive practice by foam tablets indicated some effect. Approximately 15 percent of couples reported that they had practiced some form of contraception before the study. The birth rate was low enough, 38 per 1000 population per year, to suggest that the inhabitants of this area were to some extent restricting their births.

Why there was No Decline

From studies on births, deaths and migrations some, and indeed most, of the families were acting to modify their population pressure. The facts were clear enough but the reasons for their actions were not always so definite. Some acts, like out-migration, appear to have been fairly direct efforts to modify the pressure. Others, such as a later age of women at marriage and separation between husbands and wives, apparently reflected mixed motivations. The women practiced long breast-feeding for at least two reasons: to supply their children with food, and to delay their next conception.

During four years of continuous observation, the 12,000 persons living in eleven villages had a crude birth rate averaging 38 live births per 1000 population per year, and a crude death rate of 17. The excess of births over deaths would increase the population by 2.1 percent each year. However, the population was only increasing at a rate of 1.1 percent each year, with the large difference due to net out-migration from the study populations.

Most of the migrants were young adult males, commonly unmarried. Nearly 30 percent went to other rural areas; and 80 percent migrated to urban and rural areas in other administrative Districts or States. About half the men, but less than a third of women, moved unaccompanied.

Between 1950 and 1960 the average age of women at cohabitation, often a year or more after marriage, advanced from 16½ to more than 17½ years, a change sufficient to have a small influence on the crude birth rate in the years following the study. The importance of this observation reflects first, an entirely voluntary action by the families of brides, and perhaps bridegrooms, since a marriage is arranged by the elders of the two families; second, that no outside agency was making any effort to influence age at cohabitation; and last, that if this tendency persists, it could have a considerable effect on crude birth rates.

During the course of the study, two-thirds of the newly married brides returned to their parents' homes shortly after the ceremony, and stayed for appreciable periods of time. (By universal custom their husbands did not accompany them.) For those brides, the interval between first cohabitation and first conception averaged 18 months; for the brides who did not return home, only 6 months elapsed before conception.

Children were breast-fed for a median of two years. We observed that the median length of postpartum amenorrhea was 11 months if the child survived the first month of life, and less than two months if the child was born dead or died during the neonatal period. The median interval from first menstruation to the next conception was about 9 months, regardless of the death or survival of the child whose birth started the interval. Only 7 percent of conceptions took place

before at least one menstruation.

These facts imply that breast-feeding suppressed ovulation for an average of slightly more than 9 months if the child survived at least one month, with the result that the next conception was delayed by 9 months. Evidently those women who stated they practiced long breast-feeding to delay their next conception knew what they were talking about.

Females were much more likely to die at an early age than were males. The causes were not clear. But the death rates differed so much by sex that 1000 boys and 1000 girls born alive, subjected to the observed death rates for 30 years, would result in an excess of 14 percent more men than women. This observation, together with declining death rates during the last 30 years and some remarriage of widowers, is consistent with the fact that 20 percent of men more than 25 years old in the 1959 population had never married. Among farmers more than 25 years old, the proportion of never-married men was 25 percent. Few men married for the first time past the age of 25.

However, the plain fact is that even in 1960 the population was losing by death in childhood a relatively large number of its future mothers. The resulting effect on reproduction of the population will persist for at least 15 years beyond the time when death rates of infant and preschool boys and girls become equal, the usual finding among populations with low death rates.

For women beyond the age of 45, a survey of their live births showed that in the past between 33 and 44 percent of their children died. This great loss resulted in the parents ending their childbearing years with only slightly more than the 3 or 4 surviving children they said they desired. In 1959 death rates of children were still so great that 25 percent of live born children died before their fifth birthday.

Economic Productivity

For several decades, effort has been directed toward a larger agricultural and industrial production. This endeavor has intensified since India attained independence in 1947. Farmers in the Punjab now have crops of cotton, peanuts and sugarcane, all of which are in increasing demand. In most years they sell food and crops to other parts of the country. New fertilizers and irrigation projects are resulting in greater yields from the same amount of land. Roads have been improved. As a consequence, the Punjab can support more people than it could 20 years ago. The pertinent question is how long will increased production in the Punjab be able to keep ahead of growing numbers? The disastrous consequences of poor monsoon rains in 1965, and persistent net import of food into India since 1921 demonstrate that present food production in India is already insufficient for its 480 million people.

Implications

In India and many other countries, the great majority of people are much like those in the study populations. If the numbers in the Punjab and India generally were not increasing at the rate they are, economists and government officials would have greater success in raising the standards of living. But the villagers of the Khanna study area were not particularly concerned with national productivity, the cost of providing schools, transport facilities, security forces and investment capital for industrial plants or for large-scale agricultural improvements. They were, however, concerned about the best adjustment they could make for their own good and that of their families. In a situation of relatively low per capita income and rapid population growth, as in District Ludhiana, one way to promote a healthy adjustment between people and economic productivity is to induce the birth rate to decline. But to do this people must understand and appreciate why a lower birth rate is to their undoubted benefit. Even though the people in the study area knew and practiced some birth control, the 1960 birth rate strongly suggests their lack of appreciation of the consequences of their own rapidly increasing numbers. Similar studies in other populations are necessary to establish which of the present observations reflect principles and which are findings peculiar to the population studied.

Summary & Conclusions

The field study was concerned with population pressures. It was set up to test the possibility of inducing a decline in the birth rate through a program for contraception. The populations of entire villages were small enough to permit accurate observation of births, deaths and migrations. Several investigations were directed to the biological and social factors influencing these primary determinants of population change to give a highly integrated view of these influences. The findings suggest a new set of hypotheses on how to cause a decline in birth rates in areas similar to the rural Punjab: (1) reduce the death rate of young children; (2) demonstrate to the people the implications of their rapid population growth; and (3) supply efficient methods of birth control, and encourage delayed marriage. No one activity alone is likely to reduce a birth rate by half.

Tests of the three stated hypotheses need further investigation of man as a social being within his environment. At this point in history, mankind has the chance to see that all attain self respect and health of body and mind. This chance will soon slip away unless ways are found to induce men and women to curtail their rate of proliferation willingly and without coercion.

Dr. Wyon is lecturer on population studies, Harvard School of Public Health; and senior research associate in population studies, Center for Population Studies. Dr. Gordon is professor of preventive medicine and epidemiology, emeritus, Harvard School of Public Health; and is now at the Massachusetts Institute of Technology, Clinical Research Center, in the Department of Nutrition and Food Science.



Population Growth & Development of Underdeveloped Countries

by Harvey Leibenstein, Ph.D.

IN THE popular mind the population problem is serious and urgent, and it is viewed as a major and pressing obstacle to human betterment. It is frequently believed that the difficulties standing in the path of a solution lie in the nature of religious creeds, in the lack of knowledge of contraceptive techniques, or in the lack of availability of inexpensive contraceptive devices. An examination of the facts shows this view to be mostly (but not entirely) incorrect for most countries. In most areas, including some of the poorest areas of the world, the problem is indeed serious but rarely urgent. In my view, rapid population growth is an obstacle to human betterment but in the short run it is rarely a pressing one. Furthermore, religious doctrines or lack of knowledge of contraceptive techniques have not usually been significant obstacles to the "solution" of the problem in the past. For example, the birth rate of Protestant Northern Ireland in 1965 was slightly higher than that of Catholic Eire.

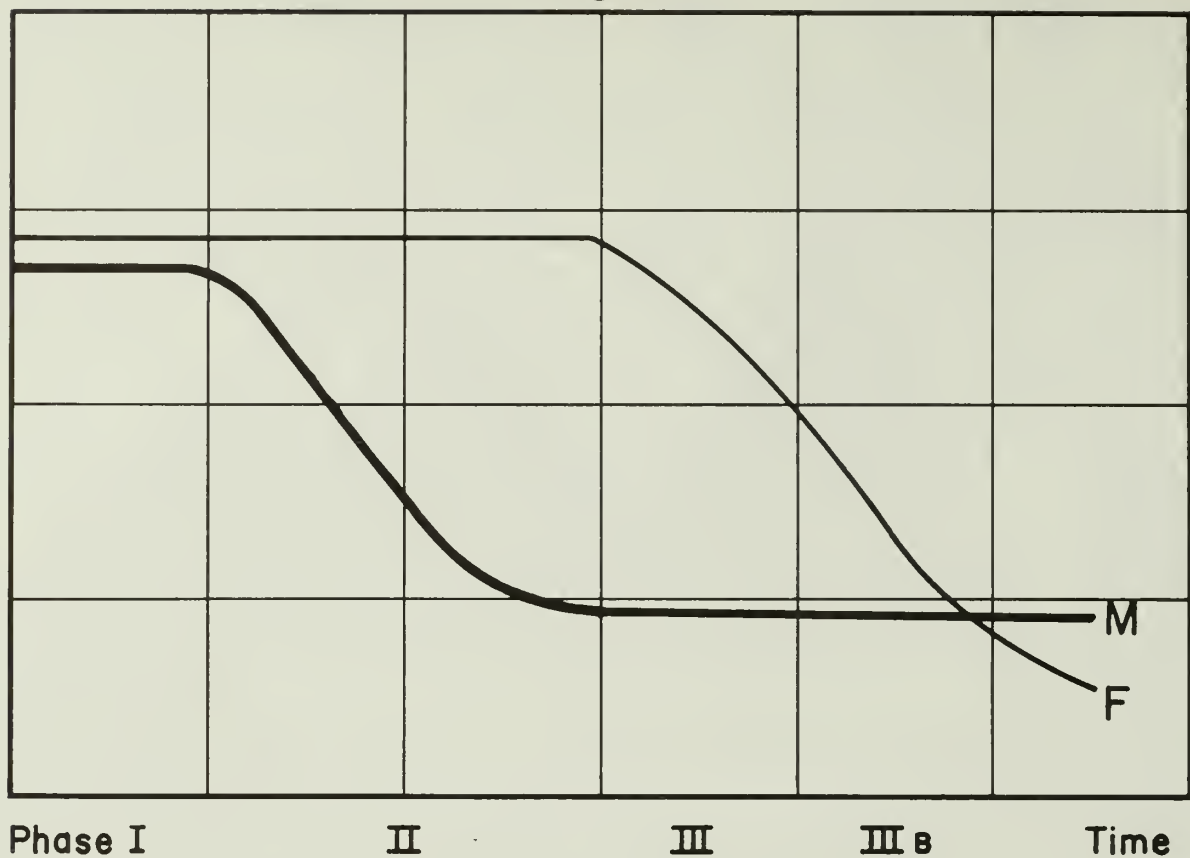
The nature of the problem and the forces that underlie population growth, as well as the consequences of such growth, are quite complex. This is an area in which almost all simple statements are likely to be false, and almost all generalizations are likely to have exceptions. Yet a good deal of the anatomy of the problem is fairly well understood, and in a general sense, the main forces involved are reasonably well known. Nevertheless, it will be necessary to use such qualifying remarks as "for the most part" quite often.

Something like a "population explosion" is taking place if

we look at the phenomenon from a long enough viewpoint. Rates of growth today are probably more than 15-fold what they were during the 2,000 years prior to 1800. Even so, it is the sort of "explosion" that people can learn to live with. Within the reasonable future, say the next half century, it would not involve too great an increase in discomfort. To some degree it can be argued that the same forces that contributed to the creation of the problem will contribute, *in part*, to its solution.

Briefly, the problem has been created by the intellectual, technical, and economic progress in the last two centuries. The basic elements are intellectual and economic. The essential "causes" are exactly those forces that have made the material world a much better, or less horrid, place than it ever was. In terms of the chances of living to old age and of earning a minimum livelihood, no one would rationally wish he had been born in a previous century. Thus, the basic cause is the increase in the expectation of life. This came about through a variety of forces, involving such factors as the control of famines, plagues, epidemic diseases, improvement in the quantity and the steadiness of food supply. Over the course of the last century, the expectation of life in Western Europe, the U. S., and Canada has increased from approximately 40 at birth to about 70. Mortality rates have dropped from over 35 per 1,000 to less than 9 per 1,000. But the main

Fig. 1.



causes of these events are far from being completely understood. There are numerous interdependent factors involved, and it is difficult to assess and differentiate the more significant from the less significant. Different authors stress different elements. For example, McKeown and Record attribute most of the 19th century decline of mortality in England to an improvement in diet, which in turn played a role in the control of various diseases. Stolnitz, in his survey of the causes of mortality decline, emphasizes the increased control of governments and societies over various types of public health measures and sanitation—apart from the effects of increases in the standard of living.

It is clear that in the 20th century, the improvement in chemotherapies, and various preventive public health measures, such as those involved in the reduction of malaria, have played significant roles. But, whatever the main causes, the three basic general facts seem to be quite clear. (1) For the most part, the underdeveloped countries prior to World War II, all started with higher mortality rates than the West, and (2) once underway, they achieved their reductions at a more rapid rate than the West. (3) In addition these reductions appear to have been less dependent on internal economic improvements than seems to have been the case in the West. There are still countries where mortality rates are relatively high. This is especially true of most of Africa south of the Sahara. At the same time, there are many countries which, by most standards, are underdeveloped and have mortality rates below 15/1000, or even below 10/1000.

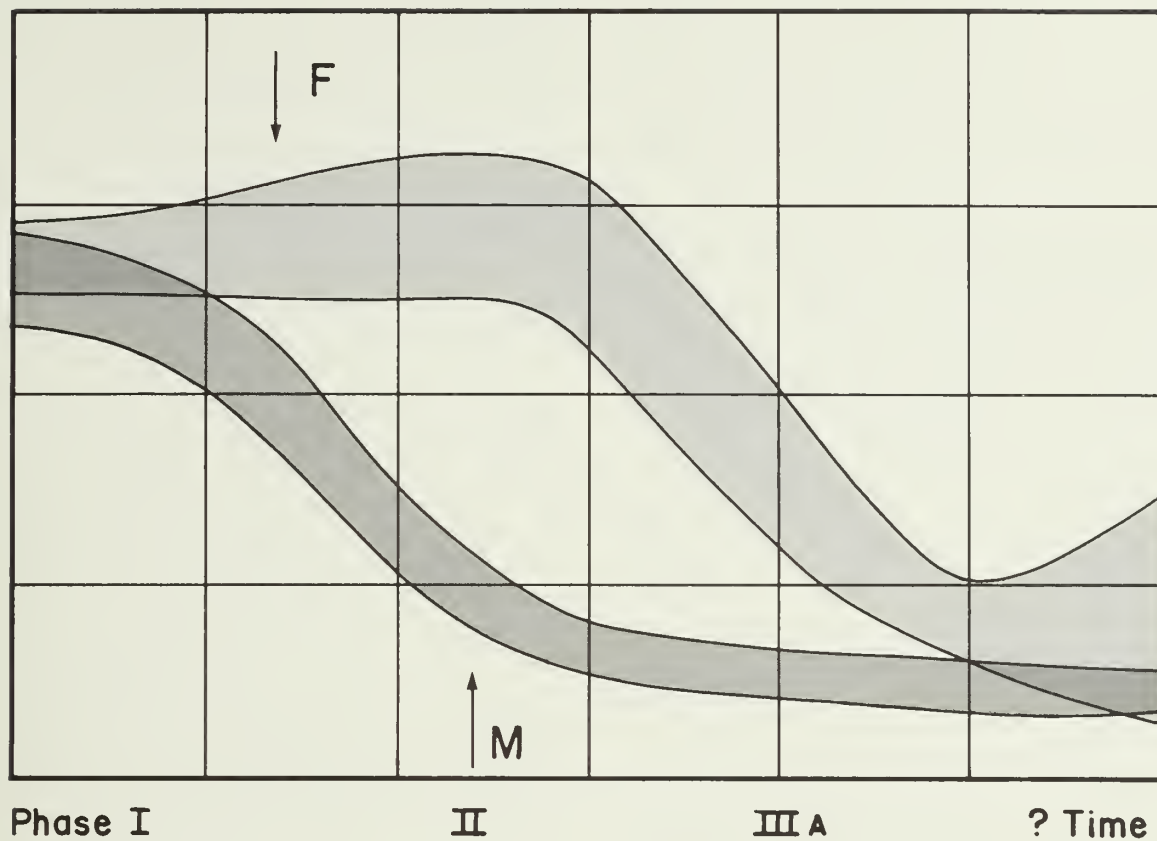
The other side of the picture is that fertility rates have either not declined, or have lagged behind mortality. Roughly similar relations between the newly developing countries

and the already developed countries as they were in their less developed stage seem to exist on the fertility side. For the most part, the currently developing countries have higher fertility rates, frequently above 40/1,000. However, once a sustained fertility decline sets in relatively low fertility behavior has been achieved quite rapidly. If we start with a fertility above 40 and achieve autonomous reductions in mortality to, say, 15/1000, then we end up with rates of population growth of 2.5 percent or above. These rates are very much higher than the world has seen in the past, with the exception of the relatively empty countries—the U. S., Australia, and New Zealand, which were developed rapidly.

The key element in the problem is the fact that fertility rates do not adjust to changes in mortality. At one time demographers held a beautifully simple theory about all this—the theory of the demographic transition. (Fig. 1)

In the initial phase mortality and fertility are approximately equal and the population grows very slowly. (The phases are designated I, II, IIIA, and IIIB). In the second phase technical and economic improvements cause mortality rates to decline. They decline quickly at first since decline is easiest when rates are highest. But there is a demographic gap. Fertility does not decline immediately since the cultural values that favored high fertility when mortality is high persist after mortality declines. Phase II is one of rapid population growth. Eventually, in phase III, sustained fertility decline sets in and approaches the mortality level as the country becomes modernized. Prior to World War II a number of Western countries such as France, Sweden, Germany had net reproduction rates that were below replacement, and this seemed to be a fulfillment of the phase IIIB

Fig. 2.



part of the theory. But alas, the age when the theory was accepted by demographers is now looked upon as an age of innocence.

The postwar baby boom in Western countries cast grave doubt on phase IIIB. Improved economic conditions appeared to induce Western populations to have more children rather than less. Historical research suggests that France had the onset of a sustained fertility decline probably in the very early part of the nineteenth century *before* the onset of a sustained mortality decline.

Furthermore in recent years, some high fertility countries (e.g. Venezuela) seem to have had rising rather than falling fertility rates after having achieved rather low mortality rates. But this only implies that there are indeed exceptions to every generalization. Certainly phase IIIB of the theory is expendable. But as a rough guideline phases I and II and perhaps half of phase III are not too bad when seen as a broad-brush sketch of historical trends. In figure 2 within the broad band labelled fertility there is room for considerable variations of magnitudes and trends.

Fertility is the critical variable. The determinants of fertility are in part cultural and in part economic. But which element dominates depends on circumstances. As a country develops, more rational considerations probably enter into some elements of the determinants of fertility for a large proportion of the population.

The main element to keep in mind with respect to fertility is that for the most part people have large families because they want them. (The phrase "for the most part" is, of course, a critical qualification.) Nevertheless, the statement and its

implications are generally true. There have been a number of attitude studies in the postwar period for both underdeveloped and developed countries. For the most part, desired family size does not on the average deviate too greatly from actual family size. In general, desired family size is lower than actual family size in underdeveloped countries, and higher (than actual) in developed countries. For example, in many underdeveloped countries the actual, almost completed, family size may be around 4.5 to 5 children where the desired is somewhere around 4. If we take the desired number seriously, then this implies that the reduction to be attained by the introduction of perfect contraceptive knowledge and a perfect contraceptive device would probably be less than 20 percent. For example, a survey for India showed a mean desired family size of 4.7 children and a near completed family size of 5.3. In 1964, a similar survey in Thailand indicated a mean number of children desired of 3.8 and completed family size of 4.6. Surveys elsewhere showed similar gaps, although, as usual, there are some exceptions and not all surveys are comparable. Given the nature of existing contraceptive devices, less than 20 percent is to be expected.

The interesting point to keep in mind is that the desired family size implies a doubling of the population roughly every generation and a rate of population growth above 2% per year. This is a very rapid rate in the light of historical experience. Of course, there are many countries (some of those in Africa south of the Sahara), where the response to attitude surveys was frequently, "as many as possible" or "as many as God will provide." Obviously, there are segments of populations in many developing economies where

the conception of fertility control is not yet in the consciousness of those living on the land. But even where this is not the case, the desired family size still implies relatively high rates of population growth. Furthermore, frequently stated reasons for wanting fewer children are of an economic nature. Hence, it is quite likely that for a segment of the population, actual family size will rise as a consequence of economic improvement.

In underdeveloped countries where desire for control exists (i.e., where the answers are not "as many as possible," or "it's up to God") the modal desire seems to be four or five children. It is tempting to speculate that this is due to two influences: (1) the strong preference for male offspring, and (2) the fact that human beings come in integral units and not in fractions. As a source of security in old age, and for many other reasons, surviving and reasonably dutiful sons are necessary. Having only one son is risky from the parent's viewpoint not only because of possible mortality and morbidity, but an only son may not turn out the way the parents want him to. Something like two or three sons is the desired number with a greater emphasis on two, since more than two implies serious economic problems in the economic costs of nurture, in the provision of dowries for daughters, and in accentuating the problem of land subdivision of very small farms upon inheritance.

There are additional complicating factors. Three elements that seem to operate as inducements for a reduction in family size are: (1) the degree of employment of women outside the home, (2) the increased education of mothers, and (3) the decline in infant mortality rates. In other words, increased employment opportunities for women will frequently result in a rise in the marriage age and/or a reduction in fertility within marriage. The forces that relate increased education of a mother to lower fertility are quite complex and not fully understood: This is an element which shows up frequently. Declines in infant mortality probably operate through the desire of parents to have a (more or less vaguely) set number of either surviving sons or surviving children. Hence, as the chances of survival increase, the fertility rate falls. Thus to some extent public health measures designed to decrease morbidity and mortality may foster fertility decline. But, nonetheless, it is most likely to fall to a rate that is very much above replacement. The main point is that the difference between *desired* and *actual* family size appears to be very much smaller than the difference between desired family size and replacement size. Thus, without a change in the motivation toward child bearing, contraception by itself cannot make a major impact on the rate of population growth.

To some degree, population control is carried out in all societies through various techniques such as late marriage, spinsterhood, bachelorhood, long periods of lactation, some infanticide and abortion, and crude methods of conception control such as *coitus interruptus*. In terms of rates of population growth approximating replacement, contraception control itself is not the answer to the problem. What is required is both superior methods of control and changes in motivation in desired family size approaching the replacement level. Such motivations do not exist even in our own highly advanced country. Indeed most countries have yet to face the problem of inducing their populations to limit fertility to a replacement level.

DOES the rate of population growth really matter? There is little doubt that at some stage a rapidly growing population, and in many countries a very much enlarged population, is an adverse factor to human betterment. However, it is not at all clear that this is an important element on a year to year basis. The reason for this is that in modern times (say, the last fifty years) the potentials for economic growth are very much superior to the potentials for population growth. The economist, when looking at the problem in its simplest form, can examine the ratios of the rates of investment in a country, (say, decade by decade) and the resulting rates of economic growth. This ratio is usually called the incremental-output ratio. It answers the question: on the average, how much additional capital will yield how much additional output in the economy per year? A commonly used capital output ratio, that appears reasonable in the light of factual data available in many countries, is 3 to 1. That is to say, \$3 of investment will yield one additional dollar to the capacity of national output per year. On this basis an 18% rate of investment (this is the rate out of the national income) would yield a 6% growth in national income per year. Even very high rates of population growth are usually no larger than 3% per year. In terms of short run potential growth, then the expansion of the economy could quite easily exceed the expansion of the population. In fact, in most underdeveloped countries, in the last quarter century the expansion of food output has kept pace with the expansion in the population, although frequently there has been only a minute increase in per person food consumption.

Using a 3 to 1 capital-output ratio yields an overoptimistic picture of the problem. This relation is based on aggregative data which frequently include simultaneous increases in labor and education per man, and technological change. Increasing only physical capital, without improving the quality of labor and the organizational capacity of the economy to adopt technological changes, usually will not result in the increases in output implicit in the above capital-output ratio. If we think only in terms of adding physical capital and raise the capital-output ratio accordingly, say to 5 to 1, or to 6 to 1, then the capacity of an underdeveloped economy to counteract the effects of rapid population growth becomes problematical. This may account for the fact that some backward economies have grown very slowly on a per-capita basis.

A rapid rate of population growth eats into the potential growth of the economy. If an economy expands at 5% per year (say, a 3 to 1 capital-output ratio and an investment rate of 15%) and its rate of population growth is 3% per year, the improvement per capita is only 2% per year. It surely makes a significant difference whether per capita improvement is 2 rather than 5%. For example, an underdeveloped country with an income of \$100 per capita will, at 2% per year, raise the income to \$400 in about 70 years. At a 5% rate of growth, it would raise it to approximately \$3,000 in the same period. This illustrates how difficult it is for a low income-high population growth country to achieve the levels of living approximating those that exist in the West. Greece and Japan represent recent examples of rapid development in the face of low rates of population growth. In recent years, both have grown at rates above 7% per year with rates of population growth below 1% per year. Clearly, a lack of population growth, achieved by significant fertility decline, has made a significant difference in their economic

achievements. Due to the shortness of the period (about 15 years in each case) they have not yet achieved the Western European level, but should they continue with their present performance, they will do so within the lifetime of many of their younger citizens. Felix Paukert of the International Labor Organization has calculated that the rates of growth in aggregate national income in developing countries is about 4.5% per year, while it is about 4% for the industrialized countries. But developing countries spend about 55% of the gains to provide for increased population, while industrialized countries spend only 19% for the same purpose.

When we look at the problem from a longer viewpoint, the situation appears rather difficult. Consider the problem of urbanization. In some Latin American countries, the capital city has been growing by as much as 7% per year. Between 1951-61, Caracas grew by 6.8%, while the population of Venezuela grew somewhere between 3.5 and 4%. Should these trends continue, the total population would double approximately every 20 years. In 50 years, the population of Caracas would be about 40 million, and the population of Venezuela would be about 210 million. A city of 40 million is a monstrosity. The mere provision of housing and transportation makes it inconceivable. Such trends cannot be maintained. Something would have to give. In terms of a government's capacity to provide facilities, which is being viewed more and more as within the government's domain, population growth looms important. Rapid growth makes it exceedingly difficult for government to maintain schools, expand medical facilities, provide housing, transportation, parking facilities, and an unpolluted environment.

A very clear-cut influence on the feasibility for economic expansion is the effect of population growth on the age structure of the whole population. A rapidly growing population will be a young population, whereas a slow growing population will be a much older population. A population that grows at about 3% per year will have about 20% less people in the working ages than one that grows at only 1% per year. This implies that the burden of dependency is very much greater in a rapidly growing population. Hence, potential savings and the possibilities for taxation are larger in the slow growing population. Professor Ansley Coale estimated that the decrease in growth, and the simultaneous decrease in the burden of dependency, achieved by reducing fertility rates by 50% in some underdeveloped countries, could increase the level of living by about 40% within a generation. Whether or not this actually happens, there is no doubt about the potential involved.

A PROBLEM that has engendered considerable debate is the effect of population growth on agricultural output. Here, too, the influences are difficult to see because technological change has made it possible for countries to increase agricultural output even in the face of rapid population growth. Nevertheless, it seems reasonable to believe that beyond some point there is such a thing as too many people on the land. Additional products, produced by additional workers, become very much lower than the previous average. Here, too, the long run consequences appear much clearer than the short run consequences. Eventually the density of population on the land becomes very high, and if the effective acreage cannot be extended, then it seems likely that a sustained re-

duced acreage per person would result. In the short run, however, the technological possibilities are so great that there usually are techniques (although some of them are very expensive) for increasing agricultural output at a greater rate than population growth.

It is sometimes argued that population growth stimulates aggregate demand and investment. However, it seems to me that in underdeveloped countries population growth by itself, is unlikely to do so, to the extent necessary to provide for the growing population. Assume that the demand for additional capital goods is in proportion to the increase in demand for consumer goods. Consider a population with the following characteristics: mortality rate 1% (10 per 1000), fertility rate 4% (40 per 1000), population 100 (or 100 million) composed of 25 households that contain 50 children. Of the 4 children born each year 1 takes care of replacement and 3 account for growth. The 3 households, in which are 3 "growth children," would have to expand demand by 25% per household in order to increase aggregate demand by 3% (75% divided by 25 households). Are the expanding households likely to do so? No, because each household is already spending 85 to 95% of their income on consumption, and it is unlikely that they would borrow substantially even if credit were available. For the most part, more people are absorbed by sharing whatever income exists rather than by increasing demand proportionately. Thus, the demand expansion inducement effect is unlikely *by itself* to stimulate the investment necessary to provide for the population growth.

Scholars still debate the influence of population growth on the economy in underdeveloped countries. Some assert that rapid population growth may in some way induce people to either work harder, invest more, or meet the challenge of adversity in more imaginative ways. Whether or not such speculations are correct is difficult to determine. Since there are significant counter-examples where countries with low rates of population growth have achieved considerable rates of growth, I do not believe that rapid population growth is either a necessary or a sufficient condition for economic growth. But it may hold in some special cases.

We must keep in mind that population growth operates as a potential obstacle to more rapid economic growth. In addition, the economic growth, which in part may have generated the population growth, will probably induce some degree of fertility decline through the process of modernization. Thus, *to some extent* it would appear that the problem may solve itself. But intelligent public policy can increase the rate at which desirable solutions come about. Ideally, such policies should do more than provide family planning facilities. If possible, governments should analyze in detail the impact of social and economic legislation on family size motivations, and, on the basis of their results, devise measures that would favor lower fertility rates.

Professor Leibenstein was visiting professor of economics at Harvard University. Last March, he returned to the University of California at Berkeley where he is professor of economics.



The following article is a tribute to things past, while Dr. Freymann's article is a projection about things to come. The importance of the new alliance was explained by Dr. Reid in the following way: "Late in the Spring of 1966, the Boston Lying-in Hospital and the Free Hospital for Women became a single corporation—The Boston Hospital for Women. At a time when it seemed desirable that a new woman's hospital be added to the galaxy of Harvard Medical School teaching hospitals, the heritage, tradition and common purposes of these two institutions made their union both logical and inevitable." Dr. Reid is William Lambert Richardson Professor of Obstetrics, Kate Macy Ladd Professor of Obstetrics and Gynecology, and Head of the Department of Obstetrics and Gynecology. Dr. Freymann is Lecturer in Preventive Medicine, and General Director, Boston Hospital for Women.

Ninety-One Years Is Only the Beginning

by Duncan E. Reid, M.D.

THE Free Hospital for Women was founded in 1875 by Dr. William H. Baker and his colleagues, Drs. J. H. Storer and J. P. Reynolds. Dr. Baker, Class of 1872, interned at the Woman's Hospital in New York where he met Dr. J. Marion Sims who inspired him to create an institution devoted to the "free treatment of poor women afflicted with diseases peculiar to their sex," including the surgical treatment of gynecological diseases.

On November 2, 1875, the first patient was admitted to the Free Hospital

Dr. Reid on rounds with his staff and HMS students.

for Women at 16 East Springfield Street in Boston. For two years, the hospital was governed by a Society, but it was formally incorporated in 1877. In 1879, an outpatient department was established and by 1895, over 7000 patients were being seen annually. The present Hospital on Pond Avenue in Brookline opened in 1896, although the out-patient services remained in Boston until 1908. During this period, a carriage service was maintained to bring patients to the Hospital from the trolley line at Brookline Village—one of the personal services to patients that has always been a hallmark of the institution.

With the opening of the Fearing Laboratory in 1928, the Free Hospital for Women entered an era of research.

Under the direction of George Van S. Smith '26 and his wife, Dr. Olive Smith, a series of initial observations on the metabolism of estrogen, with special reference to the female reproductive process and cancer, began.

In the early 1930's, it was first demonstrated that estrogen could inhibit lactation. Shortly thereafter, the presence of estradiol in human pregnancy urine was discovered, and for the first time, estrogens were separated and measured during the menstrual cycle, and in pregnancy.

It was also at the Free Hospital for Women that Arthur T. Hertig '30 and John Rock '18 performed their classic studies on the earliest of human ova, from the free blastocyst forms, to the beginning and early days of nidation.

THE Boston Lying-in Hospital for "poor women in childbed and also diseases peculiar to them" opened on May 29, 1832. The original gift of \$10,000 was contributed equally by the Massachusetts Charitable Fire Society and the Massachusetts Humane Society. But it can be said that the guiding spirit in founding the Hospital was Dr. Walter Channing.

In a sense, Dr. Channing was an outsider to Boston medicine—he received the M.D. degree from the University of Pennsylvania. He had attended Harvard College as an undergraduate but, when he participated in a student rebellion, he was asked to withdraw. (Harvard was not above admitting its error, however, and gave him his degree several years later.)

After graduation from medical school, Dr. Channing spent a year in Boston with Dr. James Jackson after which he went to London and Edinburgh to study obstetrics. In 1818, he was appointed the first Professor of Midwifery and Medical Jurisprudence at HMS, then called Massachusetts Medical College. When the name was changed to Harvard Medical School, Dr. Channing became the first dean.

There are many events in the history of the Boston Lying-in Hospital that parallel the numerous advances made in maternal and child care. In 1865, Dr. Horatio Storer first removed the puerperal uterus. This was eight years before Porro, the Italian surgeon, was credited with reducing the mortality of caesarian section from 85 to 15 percent using this method. This was also before Sanger in 1882 advocated the suturing and coaptation of the uterine wound. Dr. Storer is reputed to be the first man to teach gynecology as a separate specialty, and in 1885, he tried to persuade the Boston medical community that a hospital for the total care of women should be created. Nearly a century has elapsed, but Dr. Storer's recommendation has become a reality. This recalls the comment attributed to President Conant that Harvard oftentimes moves with glacial speed.

In 1848, Dr. Channing's classic book, *A Treatise on Etherization in Childbirth*, was published. Since then, the Lying-in has pioneered in the relief of pain during labor. It is one of very few institutions where full-time anesthesiologists are always on hand.

Alfred Worchester, a house officer at the Hospital in 1883, was the first to use bichloride of mercury as an antiseptic for hand preparation. He later applied it to patients at the time of delivery and, as a result, death from infection in the hospital became a rarity.

The Lying-in was one of the first institutions to become concerned with the interrelation of medical diseases and pregnancy. A special clinic for pregnant women with heart disease was established after World War I under Burton E. Hamilton '10, and almost immediately the death rate of pregnant patients with valvular heart disease dropped from 5 to 2 percent. Under the directorship of C. Sydney Burwell '14, the medical clinics became a prominent part of the Hospital and today provide an important student experience.

The Hospital has always had an abiding interest in the newborn. In 1880, Rufus Kingman, Class of 1882, constructed the first water-heated basinet. Hemorrhagic disease of the newborn was first described, and much of the natural history and management of erythroblastosis fetalis was outlined by cooperative efforts at The Children's Hospital and the Lying-in. The life saving procedure of exchange transfusion was developed and originally performed at the Lying-in Hospital.

Studies in recent years have dealt with cases of obstetrical bleeding in which the blood is either slow to clot, or fails to clot. With therapy now available, these clotting deficiencies can be corrected and many deaths from obstetric hemorrhage have been prevented.

At one time, the Boston Lying-in Hospital operated a domiciliary service. Most of the women who took advantage of this service were foreign born. In 1925, some 1340 women were delivered at home. From this time, the number of home deliveries fell steadily and in 1945, the service was closed. But during its years of operation, the domiciliary service was often the highlight of the medical student's career. Although the patients were carefully screened, and only so-called "normal" patients were delivered at home, many students stated that they matured rapidly on this service—"from a boy to a man in 24 hours."

The book is now closed on these two venerable institutions, but it may surely be said that they served their day and their generation well. It is hoped that their humanitarian attributes will not be lost as they enter a new phase of history—as the Boston Hospital for Women.

George Van S. Smith '26, W. H. Baker Professor of Gynecology and Head of the Division of Gynecology.



By an historic accident we have come in this decade to the intersection of two paths—the pathway being followed by gynecology and obstetrics as it has grown and developed as a medical discipline and the pathway being followed by our society as it has addressed itself to examining the cause and cure of our threats and ills. At this intersection it has become evident that many of the problems that seriously concern our society are related to the discipline of gynecology and obstetrics. . . . Our society is asking for help and many of the weapons which are needed are to be found largely in the therapeutic armamentarium of this specialty. We did not ask for this—we did not seek it out. Nevertheless, we find ourselves at such a crossroads and we cannot flee the responsibility it implies.*

Pioneering for the Future

by John G. Freymann '46

TODAY the size of a new hospital or an addition is at best determined by guess, and all too often, by pride or even proprietary interest. The new science of systems analysis must be applied to hospital construction and operation if we are to provide rational health care facilities to meet community needs. Thousands of factors need to be analyzed—birth rate, population mobility, disease incidence, usual lengths of stay, traffic patterns, and other health facilities.

The in-patient areas will be flexible in design. There will be "bridal suites" for those who want them, but most women will probably prefer comfortable, hotel-like accommodations near their babies, where they themselves will require only minimal nursing care after the first post-partum day. Rooming-in will be encouraged and provided for all who want it. Gynecological in-patient accommodations will run the scale from inten-

sive care for the desperately ill or immediate post-operative patient, through relatively few of the nursing units which we now consider standard, to self-care areas for the convalescent. There will also be extended care facilities for the patient who needs long-term hospitalization, rehabilitation or terminal care.

Equal or even greater emphasis, however, will be placed upon the ambulatory patient. I foresee the day when the patient in bed (other than first day post-partum) will be regarded as a failure in health maintenance. The size of the hospital will be computed in units of patient care administered, and the bed will be discarded as a unit of measure.

The new Women's Hospital will not be a terminus, but rather a portal of entry into the medical care system. Its chief role will be as a health center for

* Barnes, Allan C., *The Social Responsibility of Gynecology and Obstetrics*.

all women past the age of puberty. Furthermore, its clientele will not be confined to women who are pregnant or who have gynecologic conditions. The hospital will be equally concerned with maintaining the existing physical and emotional health of women and will take a primary interest in the role of the woman in relation to her family and to society as a whole. The care of women who, at least during their active reproductive life, suffer from intercurrent diseases such as diabetes, arthritis, urologic disorders, minor psychiatric disturbances, would also logically be centered in the Women's Hospital.

The ambulatory care facilities will be patient-centered, not doctor-centered. The patient would have the opportunity to develop a professional relationship with a single physician who will be able to draw into his office, at any time, the skills and knowledge of other specialists. The patient will not, as is so often

true in today's fragmented, doctor-centered system, need to divide her allegiance between a variety of unconnected specialists only reached via extended journeys through space and time. Diagnostic services and many treatments will be so well organized and coordinated that she will never need hospital admission unless her physical condition requires confinement to bed. Not only will this keep the patient in her normal environment, but it will also blunt the insatiable demand for more beds that is one of the main factors in pyramiding hospital costs.

Here I must digress to appeal for a new term to describe the place where ambulatory patients are cared for. "Clinic" bears the connotation of charity and is, furthermore, derived from the Greek word for bed. "Out-patient Department" is even worse, conjuring visions of hard benches and long waits, while "patient" is derived from the Latin root, "to suffer." We need a modern term to describe an institution comparable to the "Aesculapion" of the ancient Greeks. Every Greek city had an "Aesculapion," literally a temple of health, in which emphasis was placed upon the physical, mental and emotional health of the whole person.

There will be one class of care and the present division of the hospital into "ward" and "private" areas will become obsolete. However, I think there will still be need for a scale of luxury of in-patient accommodations, depending on how much a person wishes to pay.

All patients will receive private care within a university teaching hospital. They will be cared for by the team of attending physician, resident and medical student.

The future hospital will complete the breaking down of barriers, begun in the 1960's, between itself and the community. It will sponsor community health centers for prenatal care, family planning, marital counseling. It will also make available, particularly to schools, its personnel and facilities for sex education and pre-marital counseling.

Human genetics will be one of the major clinical and research departments in the new hospital. Beyond genetics we can already see the vague outline of a new science, "euphenics," man's ability to control his own development.

Many overlook the role of pediatrics

at the Boston Hospital for Women. At any given time, one in-patient in three will be an infant. Enormous strides have been made in reducing infant mortality, but they have not been nearly as successful as those made in reducing maternal mortality. In terms of useful years of life lost to society, perinatal mortality is the greatest public health problem facing the nation today. The loss is particularly severe with the low birth weight infant, and it is a tragic fact that since 1943, there has been no decrease in the mortality of live born infants weighing less than 2500 grams. Furthermore, most of the four million mentally retarded or congenitally deformed children come from this group. Treatment of the fetus as a patient *in utero*; prevention or treatment of disease or deformity during the first nine months of life will be necessary to solve this tragic problem. This is the last frontier of pediatrics, and no institution should be better suited to explore this frontier than the Women's Hospital.

First-class health care requires all health disciplines to meet in the "Aesculapion" and at the bedside. Therefore, although there are obvious advantages to having the offices and ambulatory facilities for OB-GYN staff and patients in one area, we must avoid rigid, physical compartmentalization

into clinics. This arrangement, now almost standard in traditional "OPD's," has done more than anything else to fragment care and inhibit teaching. Only by breaking down interspecialty barriers and grouping related interests can we achieve the patient-centered ideal mentioned.

It is equally important to minimize the enormous costs of modern medical care by sharing core facilities with the other hospitals. We must have operating rooms reserved for gynecological surgery, but efficiency and economy will require that they be adjacent to other OR's so that the same central supply services and pathology and anesthesia equipment can be used. The same applies to our delivery rooms, although we will have our own staff of obstetric and gynecologic pathologists and anesthesiologists. The labor rooms will, of course, be adjacent to the delivery rooms. Because of the need for electronic monitors, complex instrumentation, and specialized nursing we will share intensive care facilities with the other hospitals. But, there will be a special area for acutely ill patients in labor. Finally, extended care facilities will probably be in a separate structure, and shared with the other hospitals, because their functions and designs differ from those in acute hospitals.

Whatever the structural design of

Dr. Claude A. Villee, Andelot Professor of Biological Chemistry.





Dr. Freymann

the new complex, we must assume that in any fixed form it will be obsolete the day it opens. For this reason, it must be designed as a "plastic organism" ready to adapt and mutate under the unforeseeable pressures of the 21st Century.

Just as the structure of the hospital must be adaptable, so must the members of the medical staff. No one can foresee what adaptation will be necessary, but we already know that the hospital is no longer the exclusive workshop of the physician. The expanding functions and increasing demands on the hospital will require broader application of the skills of all the other health professions. The nurses, social workers, dietitians, physiotherapists, laboratory technicians, child guidance personnel, sociologists, even the economists and the clergymen, will have in-

creasingly important roles. The physician is learning that he must work as a member of a multi-disciplinary team, and that it is impossible for him personally to meet all the needs of each of his patients. He will have to learn to delegate many of his functions to other professionals who can fulfill them as well, or sometimes even better. On the other hand, he must not swing too far and degenerate into a mere technician or manager. A balance must be found that preserves the interpersonal relationship between doctor and patient which will always be the hallmark of medicine. Achieving this compromise will probably be the greatest challenge members of our Staff will meet in the coming generation.

Unless we foster versatile, innovative and self-renewing men and women, all the ingenious social arrangements in the world will not help us.*

In summary, I see the new Boston Hospital for Women as a pioneering departure in health care and community service, a center that will be devoted—both in health and disease—to woman in her role as sustainer of the species and to the fetus and newborn as inheritors of our civilization.

* Gardner, John W., *Self-Renewal: The Individual and the Innovative Society*.



ALONG THE PERIMETER

Plans Underway for Two New Programs

Dr. Robert H. Ebert, Dean of the Faculty of Medicine, recently announced plans for the development of two new, integrally related programs. Their goals will be the special preparation of physicians equipped to assume a creative role in serving the health needs of modern society.

Preliminary support for the programs has been made possible by a grant of \$200,000 annually for the next three years from The Commonwealth Fund of New York.

The first program will develop and put into operation a plan for comprehensive medical care, addressed to the national problem of how medical care can be made more accessible and better organized. It will endeavor to define the role, structure, operation and relationship of each type of health facility within a total health care system, and will involve the several hospitals affiliated with the Harvard Medical School. This program is under the direction of Jerome Pollack, Associate

Dean for Medical Care Planning and Professor of the Economics of Medicine at Harvard.

The second program will be the establishment in Cambridge, Massachusetts, of an integrated system of health and medical care for that city, through the Cambridge City Hospital. Working with physicians in the City of Cambridge as well as with public and private health and family services and schools, the program will involve such aspects as mental health, child development, rehabilitation services, extended care and home care.

Harvard's portion of the program will be supervised by Dr. Leona Baumgartner, Visiting Professor of Social Medicine at HMS.

Speaking of the second Cambridge program, Dr. Ebert said, it "is specifically designed to bring to the people of Cambridge the highest quality of medical care."

From the standpoint of instruction

for HMS students, Dr. Ebert said he was sure that both programs, "when fully organized and implemented, will expand the School's capacity for instruction and research by serving as the medium for interrelating the disciplines of medicine, public health, public administration, the fields of social science, and the entire Harvard-related hospital system.

"Within this framework we hope to promote the kind of teaching environment that will encourage the medical student to become as critically aware of the system for *delivering* medical care as he now is of the biological problems that relate to medicine.

"In this way," Dr. Ebert emphasized, "the Medical School hopes to contribute to the evolution of a new kind of physician—one who is broadly educated, socially aware and versatile enough to confront and lead in the solution of problems in medical care at both the individual and community levels."

Two Promoted to Clinical Professor

Two members of the Faculty of Medicine have been promoted to clinical professorships. Alexander Marble '27 is clinical professor of medicine; William Berenberg is clinical professor of pediatrics.

Dr. Marble is physician at the Joslin Clinic and the New England Deaconess Hospital, where he is also president of the Medical Administrative Board.

An international leader in diabetes research and the care of the diabetic patient, Dr. Marble has been associated with HMS since 1928. He is a diplomate of the American Board of Internal Medicine and a former president of the Suffolk District Medical Society, the New England Diabetes Association, and the American Diabetes Association.

Dr. Berenberg received the M.D. degree in 1940 from Boston University School of Medicine. Since 1943, he has been associated with HMS and The Children's Hospital where he is chief of the Infants and Children's Medical Division.

Dr. Marble

Dr. Berenberg



Dr. Moloney Joins Faculty

On July 1, 1967, William C. Moloney will become clinical professor of medicine at Harvard Medical School, and physician and supervisor of research in hematology at Peter Bent Brigham.

Since 1935, Dr. Moloney has been associated with Tufts University School of Medicine where he is professor of medicine. He is also director of the Tufts hematology laboratory, and associate director of the First and Third (Tufts) Medical Services at Boston City Hospital. Dr. Moloney received the M.D. degree from Tufts in 1932.

From 1952-54, Dr. Moloney was deputy director for research of the Atomic Bomb Casualty Commission in Hiroshima, Japan. During this time, he studied the leukemogenic effect of radiation on atomic bomb survivors. Upon his return to the U.S., he became a research fellow at the Oak Ridge Institute of Nuclear Studies.

More recently, he has been studying leukemogenesis in the rat. His investigations have been carried out simultaneously with clinical and laboratory investigations on histochemical, cytogenetic and other features of myeloproliferative disorders in man.

Dr. Moloney is a member of the subcommittee on Acute and Long-Term Hematologic Effects of Atomic Radiation; the Advisory Biomedical Committee, Massachusetts Institute of Technology Nuclear Reactor; and the board of directors, Massachusetts division, American Cancer Society.

Dr. Lisco, Assistant Dean

Hermann Lisco has been appointed Assistant Dean of the Faculty of Medicine for Student Affairs. He will work with Dr. Joseph Gardella, Associate Dean for Student Affairs, on student research, the academic achievement of medical students, programs for independent study, and faculty-student relationships.

Dr. Lisco, an experimental pathologist in cancer research and radiation, is lecturer on pathology at HMS, and research associate in pathology at the Cancer Research Institute of the New England Deaconess Hospital.

PROMOTIONS & APPOINTMENTS

ASSISTANT PROFESSOR

Alastair W. B. Cunningham: pathology at Peter Bent Brigham Hospital
Daniel D. Federman '53: medicine at Massachusetts General Hospital
Allan C. Goodman: audiology in the department of otolaryngology at The Children's Hospital
Barbara W. Kalckar: bacteriology and immunology
Edmund H. Sonnenblick '58: medicine

ASSISTANT CLINICAL PROFESSOR

Harold W. Demone, Jr.: social welfare in the department of psychiatry
Gerald L. O'Neill '38: operative dentistry
Lennard T. Swanson '48: dentistry
Peter Kai-Jen Yen '54: orthodontics

ASSOCIATE

Herbert I. Bader: periodontology
James R. Carter, Jr.: medicine at Massachusetts General Hospital
M. Judah Folkman '57: surgery
Mitchell T. Rabkin '55: medicine at Beth Israel Hospital
Kurt Randerath: biological chemistry in the department of medicine at Massachusetts General Hospital
Michael K. Rees, biological chemistry in the department of medicine at Massachusetts General Hospital
Peter H. Schur '58: medicine at Robert Breck Brigham Hospital
Harvey M. Shein '61: psychiatry at McLean Hospital
Joseph P. Van Der Meulen: neurology
Nancy E. Waxler: social psychology in the department of psychiatry

CLINICAL ASSOCIATE

Martin A. Berezin: psychiatry
Donald J. Glotzer: surgery
Dorothea E. W. Hellman '57: medicine
Martin B. Levene: radiology
Robert J. Matusow '56: operative dentistry

LECTURER

Lloyd E. Hawes '37: radiology
Andrew G. Jessiman: medicine

MEDLARS Program in Full-Swing at Countway Library

The Countway Library of Medicine is now ready to accept requests from any practicing physician in New England for literature searches by computer—known in library circles as MEDLARS (Medical Literature Analysis and Retrieval System).

MEDLARS has been serving a successful test period as the New England regional center since last May. The Countway is one of only five medical libraries designated as a search center.

This is how MEDLARS works:

A physician wanting to read the latest information on angiosarcoma, for example, writes or calls,

MEDLARS REGIONAL SEARCH CENTER
(NEW ENGLAND)

Francis A. Countway Library of Medicine, 10 Shattuck Street, Boston, Mass. 02115, Tel: 617-734-3300, Ext. 109. He describes his subject as precisely as he can. The Search Center

"formulates" the question in accordance with the nomenclature of the MEDLARS system. It goes through the computer, and in due course a typed, tailor-made bibliography of periodical articles is machine-produced and sent to the inquiring physician. There is no cost for this service.

The store of literature to which the system has access are the periodical articles that have been included in *Index Medicus* since January 1964.



Hugh Stalker '24 (center) of Grosse Pointe Shores, Michigan, shows receipt for a loan payment, signed by the noted British physician, Dr. John Radcliffe on July 21, 1702, to Henry R. Viets '16 (left), consultant for historical collections, and Mr. Ralph T. Esterquest, librarian, Francis A. Countway Library of Medicine. In the case are a few of the collected autographs and memorabilia of famous medical personages presented to the Library by Dr. Stalker.



Memorabilia

Forty-seven years ago, while a first year student at HMS, Hugh Stalker '24, of Grosse Pointe Shores, Michigan, browsing through a downtown Boston book shop, came upon and purchased a letter signed by Louis Pasteur.

Last February, Harvard's Countway Library of Medicine opened a display of collected autographs and memorabilia of famous medical personages both past and present. Those exhibited were only a small part of a collection, appraised at \$10,000, which Dr. Stalker presented to the library.

The oldest autograph is that of Dr. John Radcliffe, a British physician of the 17th and 18th centuries, affixed to a receipt for a loan payment and dated July 21, 1702. The oldest letter—a business letter—written by Dr. John Hunter, the renowned British surgeon, is dated January 29, 1760. Others represented in the collection, either by autograph or photograph, include Sir Frederick Banting, John Shaw Billings, Paul Ehrlich, Sigmund Freud, Oliver Wendell Holmes (Junior and Senior), Sir William Osler, Ivan P. Pavlov, Rudolph Virchow, Carl Gustav Jung, Harvey Cushing and Benjamin Rush.

In presenting the collection, Dr. Stalker said, "I have been very fortunate over the years to know many people in the great walks of life, no small number of whom I first met as a direct result of my hobby. . . ." Now retired, Dr. Stalker specialized in internal medicine during his active medical career. The collection of autographs is only one of his many hobbies, which include the collection of books, Chinese jade, and mint stamps of the United States and the United Nations.

Two Hearty Alumni



Last February, at a ceremony in Washington, D.C., the American College of Cardiology honored two Alumni for their services in three Far and Near Eastern countries—Burma, Thailand and South Vietnam.

Awards were presented by Vice President Hubert H. Humphrey to, Howard B. Sprague '22, retired member of the Faculty of Medicine at Harvard, and Dwight E. Harken '36, clinical professor of surgery at Harvard.

Dr. Sprague and Dr. Harken were cited for their "participation in overseas teaching programs of the American College of Cardiology in countries of the Near and Far East." They served in the areas from November 23 to December 18, 1966, in a program termed by Secretary of State Dean Rusk: "A generous and imaginative contribution to international understanding."

Frederick G. Keyes (second from right) has presented to the Francis A. Countway Library of Medicine the original, hand-operated electrostatic generator and x-ray tube used by the first clinical radiologist in the United States—the late Dr. Francis Williams. Professor Keyes, who is professor of chemistry, emeritus, at Massachusetts Institute of Technology, was a long-time friend and associate of Dr. Williams, who was professor of chemistry and head of the department at Massachusetts Institute of Technology.

The hand-operated machine contains two glass plates which generate electricity as they revolve. The current is stored in Leyden jars which are molded onto the generator. The machine, which is on display in the Countway Library, has been restored, and is operative.

At the February meeting of the New England Roentgen Society at Longwood Towers, Professor Keyes also presented the Library with a pastel portrait of Dr. Williams.

Left to right below are: Lloyd E. Hawes '37, lecturer on radiology at Harvard Medical School, and honorary curator of the historical collection in radiology, Countway Library of Medicine; Professor Keyes; and Robert E. Wise, president, New England Roentgen Society.



Enders Professorship Fund Established at HMS

A surprise dinner honoring John F. Enders on his 70th birthday was held Feb. 10, 1967. During the dinner, the establishment of the Enders University Professorship Fund, by the President and Fellows of Harvard College, was announced. Dr. Enders will retire as University Professor at Harvard on June 30, 1967. He is chief of the research division of infectious diseases at Boston's Children's Hospital Medical Center.

The initial gift to the Professorship Fund was \$100,000 from the Merck Company Foundation. Dr. Max Tishler, president of the Merck Sharp and Dohme Research Laboratories, said, "We are pleased in this way to recognize the accomplishments of Dr. Enders whose contributions to research and to the isolation of polio and measles viruses led to the development of effective vaccines against these and other diseases. A scientist of his character and distinction will be an inspiration to students, teachers, and research workers for generations to come."

University Professorships at Harvard were established by a vote of the President and Fellows in June, 1935, for "Professorships for men of distinction not definitely attached to any particular Department." The Chairs are re-

served for men working on the frontiers of knowledge in such a way to cross the conventional boundaries of the specialists. At present, there are six scholars who hold such Professorships within the University.



A large, rare lung fish, *Neoceratodus Forsteri*, flown in from Australia, is quietly waiting for the action to begin. Some interesting action—first biochemical then culinary—is planned by Dr. Leon Goldstein (center), assistant professor of physiology, HMS, Dr. Roy P. Forster (left), Ira Allen Eastman Professor, Dartmouth College, and Dr. Peter Janssens (right), research fellow, department of physiological chemistry, University of Wisconsin. They intend to measure the biochemical pathways of the fish's metabolism by means of radioisotope tracers, hoping to find the individual enzymes that show how ammonia becomes detoxified by incorporation into urea within the fish's system. Shortly after this picture was taken, they discovered that despite the fish's lack of need for a urea cycle, vestiges of the enzymes were present in its liver. This is of evolutionary significance, and points to a common ancestry between the Australian and African species. The Australian lung fish is only found in two rivers in Australia. But, unlike its African cousin, *Protopterus*, it is a totally aquatic fish. It does not, for instance, come out of water, wrap itself in a cocoon and stay buried for months or even years, although, it can breath above or under water, as it wishes.





INTERNSHIP LIST

1967

Unless otherwise noted all internships start July 1, 1967 for one year.

<i>Name</i>	<i>Hospital and location</i>	<i>Service</i>
Aaron, Robert S.	Beth Israel Hospital, Boston	Medicine
Adelekan, Adetunji	Cambridge City Hospital, Cambridge	Rotating
Asher, John D.	Boston City Hospital (Harvard Service), Boston	Surgery
Axelrod, Lloyd	Peter Bent Brigham Hospital, Boston	Medicine
Bagley, Charles M., Jr.	Beth Israel Hospital, Boston	Medicine
Ballantine, Thomas V. N.	Boston City Hospital (Harvard Service), Boston	Surgery
Bayard, Edward Q.	Strong Memorial Hospital, Rochester, New York	Medicine
Berc, Kenneth M.	St. Luke's Hospital Center, New York, New York	Medicine
Bernet, F. William	Bronx Municipal Hospital Center, New York, New York	Rotating
Bissell, Dwight M., Jr.	Boston City Hospital (Harvard Service), Boston	Medicine
Bleiberg, Mona L.	Beth Israel Hospital, Boston	Medicine
Bonnar, James M., 3d	Bronx Municipal Hospital Center, New York, New York	Pediatrics



Brauner, Gary J.	Jewish Hospital of St. Louis, St. Louis, Missouri	Medicine
Bucknall, William E.	Johns Hopkins Hospital, Baltimore, Maryland	Pediatrics
Carolan, Robert M.	University Hospitals of Cleveland, Cleveland, Ohio	Medicine
Christensen, William I.	Bernalillo County-Indian Hospital, Albuquerque, New Mexico	Medicine
Chused, Judith A. F.	Cleveland Metropolitan General Hospital, Cleveland, Ohio	Medicine
Chused, Thomas M.	Cleveland Metropolitan General Hospital, Cleveland, Ohio	Medicine
Conger, S. Beach	Boston City Hospital (Harvard Service), Boston	Medicine
Daniel, Alan	Philadelphia General Hospital, Philadelphia, Pennsylvania (University of Pennsylvania Division)	Rotating
Desser, Richard K.	Beth Israel Hospital, Boston	Medicine
Diamond, Richard D.	Yale-New Haven Hospital, New Haven, Connecticut	Medicine
Dolin, Raphael	Boston City Hospital (Harvard Service), Boston	Medicine
Donahue, Valentina E. C.	Beth Israel Hospital, Boston	Surgery
Dorman, John M.	Strong Memorial Hospital, Rochester, New York	Medicine
Dorner, Douglas B.	University of California Hospitals, San Francisco, California	Surgery
Dunham, Tom R.	Presbyterian-St. Luke's Hospital, Chicago, Illinois	Medicine
Dushman, Miriam B.	Beth Israel Hospital, Boston	Medicine
Eagleton, Lanie E.	University of Virginia Hospital, Charlottesville, Virginia	Medicine
Ellman, Leonard L.	Massachusetts General Hospital, Boston	Medicine
Erdmann, A. John, 3d	Massachusetts General Hospital, Boston	Surgery
Falchuk, Z. Myron	Peter Bent Brigham Hospital, Boston	Medicine
Finseth, Katherine F. A.	Arrangement pending	
Fischer, John R.	Los Angeles County Harbor General Hospital, Torrance, California	Rotating
Floyd, Richard P.	University of Colorado Medical Center, Denver, Colorado	Medicine

List continued on page 51.

VOTE
for
THREE CANDIDATES
for
HARVARD MEDICAL ALUMNI COUNCIL

1967-1970



RETURN BALLOT TO: Alumni Office
Harvard Medical School, 25 Shattuck Street
Boston, Massachusetts 02115

BY 12:00 NOON
FRIDAY, MAY 19, 1967

HAROLD HENRY HAMILTON '30

Plymouth, Massachusetts

A.B. (Westminster College) 1924

- 1930-1932 Second Surgical Service, B.C.H.
- 1932-1933 Surgical Resident, M.G.H.
- 1933-1934 Resident, Malden Hospital
- 1934-1942 General Practice and General Surgery, Plymouth, Mass.
- 1938-1966 Chief of Surgery, Jordan Hospital, Plymouth, Mass.
- 1942-1944 Chief of Surgery, Regional Hospital, Westover Field
- 1944-1945 Chief of Surgery, 113th Evacuation Hospital
- 1945-1946 Commanding Officer, 91st Evacuation Hospital
- 1946-1948 Surgical Consultant, First Army
- 1946- General Surgery, Plymouth, Mass.
- 1966- Visiting Surgeon, Jordan Hospital, Plymouth, Mass.

Member and Past President, Massachusetts Medical Society, Plymouth District;
Fellow, American College of Surgeons; Member, New England Surgical Society;
Committee on Applicants, American College of Surgeons; Associate Member,
Boston Surgical Society.



A

B



JOHN EDWIN ADAMS '39

San Francisco, California

A.B. (University of California at Berkeley) 1935

- 1939-1940 Intern in Pathology and Surgery, P.B.B.H.
- 1940-1941 Surgical Resident, P.B.B.H.
- 1941-1946 United States Navy
- 1946-1948 Assistant Resident to Special Resident Fellow in Neurological Surgery, University of California Hospitals
- 1948-1965 Instructor to Associate Professor in Neurological Surgery, University of California School of Medicine
- 1956- Chairman, Division of Neurological Surgery, University of California School of Medicine
- 1965- Professor in Neurological Surgery, University of California School of Medicine

Fellow, American College of Surgeons.

JOHN BAMBER HICKAM '40

Indianapolis, Indiana

A.B. (Harvard College) 1936

- 1940-1941 Medical Intern, P.B.B.H.
- 1941-1942 Senior Medical House Officer, P.B.B.H.
- 1942-1943 Medical Resident, Grady Hospital, Emory University School of Medicine
- 1943-1946 U.S. Army Medical Corps
- 1946-1947 Instructor in Medicine, Emory University School of Medicine
- 1947-1958 Instructor to Professor of Medicine, Duke University School of Medicine
- 1958- Professor and Chairman, Department of Medicine, Indiana University School of Medicine

Diplomat, American Board of Internal Medicine; Fellow, American College of Physicians; Member: American Society for Clinical Investigation; Southern Society for Clinical Research; Central Society for Clinical Research; American Physiological Society; American Federation for Clinical Research; American Trudeau Society; Association of American Physicians; American Clinical and Climatological Association; Phi Beta Kappa; Alpha Omega Alpha.



C

CARLETON BURKE CHAPMAN '41

Hanover, New Hampshire

A.B. (Davidson College) 1936, M.P.H. (Harvard University) 1944

D

- 1941-1942 Medical Intern, B.C.H.
- 1942-1944 Assistant Medical Resident to Resident, B.C.H.
- 1944-1946 Rockefeller Fellow, Division of International Health USPHS, Assistant Surgeon to Senior Assistant Surgeon, assigned to U.N.R.R.A.
- 1946-1947 Assistant in Medicine, H.M.S.
- 1947-1953 Instructor to Associate Professor of Medicine, University of Minnesota
- 1953-1966 Professor of Medicine, University of Texas Southwestern Medical School
- 1963-1966 USPHS Career Professorship Award
- 1964 Guggenheim Fellowship
- 1966- Dean, Dartmouth Medical School

President: 1956, American Federation for Clinical Research; 1964-1965, American Heart Association; Councilor: 1951-1955, American Federation for Clinical Research; 1956-Central Society for Clinical Research; 1960, Southern Society for Clinical Research; Vice President and member, Board of Directors, 1962-1963, American Heart Association; Fellow: American College of Physicians; American College of Cardiology; American Heart Association; Member: American Association for the Advancement of Science; Society for Experimental Biology and Medicine; American Federation for Clinical Research; American Society for Clinical Investigation; Association of American Physicians; American Physiological Society.



GLEN ROLAND LEYMASTER '42

Philadelphia, Pennsylvania

A.B. (University of Nebraska) 1938, M.P.H. (Johns Hopkins University) 1950

- 1942-1943 Medical Intern, B.C.H.
- 1943-1944 Assistant Resident to Resident, B.C.H., Teaching Fellow, H.M.S.
- 1944-1948 Instructor to Assistant Professor of Bacteriology, Johns Hopkins School of Hygiene and Public Health
- 1948-1960 Associate Professor of Public Health to Professor and Chairman, Department of Preventive Medicine and Director of Health Service, University of Utah School of Medicine
- 1960-1963 Associate Secretary, Council of Medical Education and Hospitals, A.M.A.
- 1964- Professor of Preventive Medicine, Associate Professor of Medicine, President and Dean, Woman's Medical College of Pennsylvania

Diplomate, American Board of Preventive Medicine; Fellow: American Public Health Association; College of Physicians of Philadelphia; Member: Child Health and Human Development Program Committee, N.I.H.; Special Committee on Heart Disease, Cancer and Stroke, Board of Trustees of Pennsylvania Medical Society; Association of Teachers of Preventive Medicine; Phi Beta Kappa; Alpha Omega Alpha; Sigma Xi.



E

JOHN CASE NEMIAH '43B

Boston, Massachusetts

A.B. (Yale University) 1940

- 1944 Medical Intern, B.C.H.
- 1944-1945 Junior Assistant Resident, Psychiatry Service, New Haven Hospital
- 1945 Mason General School of Military Neuropsychiatry
- 1945-1947 Lt. to Capt., U.S. Army Medical Corps
- 1947-1948 Intern, Neurological Unit, B.C.H.
- 1948-1949 Assistant Resident to Resident, Psychiatric Service, M.G.H.
- 1948- Teaching Fellow to Assistant Professor of Psychiatry, H.M.S.
- 1949-1951 Instructor in Psychiatry, Tufts Medical School
- 1949-1952 Assistant Physician (Psychiatry), New England Center Hospital
- 1951-1954 Out-Patient Physician, B.C.H.
- 1951-1957 Candidate in Training, Boston Psychoanalytic Institute
- 1952- Assistant in Psychiatry to Acting Chief of Psychiatry, M.G.H.
- 1965- Acting Head of Harvard's Department of Psychiatry, M.G.H.

Diplomate, National Board of Medical Examiners; Member: Group for the Advancement of Psychiatry; American Psychoanalytic Association; Boston Psychoanalytic Society; American Psychosomatic Society; American Psychiatric Association.

F



Funkenstein, H. Harris	Peter Bent Brigham Hospital, Boston	Medicine
Galton, Virginia R.	Bellevue Hospital Center (New York University Service), New York, New York	Pediatrics
Gardner, Laurence B.	Massachusetts General Hospital, Boston	Medicine
Garibaldi, Richard A.	Boston City Hospital (Harvard Service), Boston	Medicine
Gelb, Lawrence D.	Massachusetts General Hospital, Boston	Medicine
Goldsmith, Philip L.	Peter Bent Brigham Hospital, Boston	Medicine
Goldstein, Stanton P.	St. Vincent's Hospital and Medical Center of New York, New York, New York	Surgery
Gordon, James S.	Mount Zion Hospital and Medical Center, San Francisco, California	Rotating
Gorelick, Kenneth P.	Mount Zion Hospital and Medical Center, San Francisco, California	Rotating
Greene, Andrew F.	Medical College of Virginia, Richmond, Virginia	Surgery
Griffin, Walter J.	Presbyterian-St. Luke's Hospital, Chicago, Illinois	Medicine
Gunderson, John G.	Hennepin County General Hospital, Minneapolis, Minnesota	Rotating
Gustafson, James P.	Mount Zion Hospital and Medical Center, San Francisco, California	Rotating
Gutheil, Thomas G.	Bronx Municipal Hospital Center, New York, New York	Pediatrics
Hayes, C. Robert	Peter Bent Brigham Hospital, Boston	Surgical Research
Hirschfeld, David S.	Jewish Hospital of St. Louis, St. Louis, Missouri	Medicine
Holmes, Robert H.	King County Hospital, Seattle, Washington	Rotating
Holt, William S.	Strong Memorial Hospital, Rochester, New York	Rotating
Horwich, Mark S.	Duke Hospital, Durham, North Carolina	Medicine
Hurwitz, Alfred L.	University of California Hospitals, San Francisco, California	Medicine
Irwin, Robert J.	Massachusetts General Hospital, Boston	Surgery
Jarrett, Fredric	Massachusetts General Hospital, Boston	Surgery
Jencks, Stephen F.	Presbyterian-University of Pennsylvania Medical Center, Philadelphia, Pennsylvania	Medicine
Johnson, Burt P., Jr.	University of California Hospitals, San Francisco, California	Medicine
Johnson, David G.	University of California Hospitals, San Francisco, California	Medicine
Joseph, N. Howard	Rochester General Hospital, Rochester, New York	Medicine
Kadish, Anna S.	Bronx Municipal Hospital Center, New York, New York	Pathology
Kadish, Lawrence J.	Bronx Municipal Hospital Center, New York, New York	Surgery
Kahn, James B.	Beth Israel Hospital, Boston	Medicine
Kahn, Jesse L.	King County Hospital, Seattle, Washington	Rotating
Kempczinski, Richard F.	University Hospitals of Cleveland, Cleveland, Ohio	Surgery
Knopf, Harry L. S.	Duke Hospital, Durham, North Carolina	Medicine
Korshin, Oliver M.	Boston City Hospital (Boston University Service), Boston	Medicine
Kourides, Ione A.	Jewish Hospital of St. Louis, St. Louis, Missouri	Medicine
Kumpe, David A.	Presbyterian Hospital, New York, New York	Surgery
Kupor, Larry R.	University of Chicago Hospitals and Clinics, Chicago, Illinois	Medicine
Landrigan, Philip J.	Cleveland Metropolitan General Hospital, Cleveland, Ohio	Pediatrics
Latty, Alexander B.	Duke Hospital, Durham, North Carolina	Medicine
Lazar, Gerald K.	Presbyterian-St. Luke's Hospital, Chicago, Illinois	Medicine
Levine, Stanley B.	Yale-New Haven Hospital, New Haven, Connecticut	Pathology
Lewinnek, George E.	Palo Alto-Stanford Hospital Center, Palo Alto, California	Surgery
Liggio, Raymond	University of Colorado Medical Center, Denver, Colorado	Surgery
Lisanti, Michael J.	Roosevelt Hospital, New York, New York	Surgery
Loewenstein, Matthew S.	Boston City Hospital (Harvard Service), Boston	Medicine
Mabogunje, Oluwatope A.	Bellevue Hospital Center (New York University Service), New York, New York	Surgery
MacDougall, Bruce A.	Massachusetts General Hospital, Boston	Surgery
Mahnke, Mark W.	Philadelphia General Hospital, Philadelphia, Pennsylvania (University of Pennsylvania Division)	Rotating
Malter, Ira J.	University Hospitals of Cleveland, Cleveland, Ohio	Pediatrics
Mark, Eugene J.	Stanford University Affiliated Hospitals, Palo Alto, California	Medicine
Mastroianni, Nicholas A.	Boston City Hospital (Tufts Service), Boston	Surgery
McAlary, Brian G.	U. S. Naval Hospital, Oakland, California	Rotating
McGowan, John E., Jr.	Boston City Hospital (Harvard Service), Boston	Medicine
McLennan, James E.	University of Minnesota Hospitals, Minneapolis, Minnesota	Surgery
Meissner, William W.	Mount Auburn Hospital, Cambridge	Rotating
Mills, Roberta A.	Cleveland Metropolitan General Hospital, Cleveland, Ohio	Medicine
Mitch, William E., 2d	Peter Bent Brigham Hospital, Boston	Medicine

Molinoff, Perry B.	University of Chicago Hospitals and Clinics, Chicago, Illinois	Medicine
Mooney, Peter B.	University Hospital, Lexington, Kentucky	Medicine
Morris, Ira A.	Rhode Island Hospital, Providence, Rhode Island	Medicine
Morrison, Peter N.	Medical College of Virginia, Richmond, Virginia	Surgery
Muroff, Lawrence R.	Boston City Hospital (Harvard Service), Boston	Surgery
Murphy, William M.	Medical College of Virginia, Richmond, Virginia	Surgery
Murray, Michael J.	Palo Alto-Stanford Hospital Center, Palo Alto, California	Surgery
Muzzarelli, Uberto T.	Greenwich Hospital, Greenwich, Connecticut	Rotating
Nelson, John P.	St. Luke's Hospital Center, New York, New York	Medicine
Newhouse, Jeffrey H.	Roosevelt Hospital, New York, New York	Surgery
Ogunye, Medrose O.	Cambridge City Hospital, Cambridge	Rotating
O'Neill, Daniel P.	Presbyterian-St. Luke's Hospital, Chicago, Illinois	Medicine
Pasternak, Derick P.	Bronx Municipal Hospital Center, New York, New York	Medicine
Phillips, Lawrence S.	Presbyterian-St. Luke's Hospital, Chicago, Illinois	Medicine
Pitts, W. Reid, Jr.	Massachusetts General Hospital, Boston	Surgery
Pressman, Barry D.	Peter Bent Brigham Hospital, Boston	Surgery
Putnoi, Donald W.	Mount Sinai Hospital, New York, New York	Medicine
Ram, Meryl H.	Health Center Hospitals of the University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania	Medicine
Reigart, J. Routt, 2d	Children's Hospital Medical Center, Boston	Pediatrics
Reiling, Richard B.	Boston City Hospital (Harvard Service), Boston	Surgery
Rogell, Gerald D.	Presbyterian-St. Luke's Hospital, Chicago, Illinois	Medicine
Rohde, Jon E.	Boston City Hospital (Harvard Service), Boston	Medicine
Roth, Gerald J.	University of Utah Affiliated Hospitals, Salt Lake City, Utah	Medicine
Ruberg, Robert L.	Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania	Surgery
Saxbe, W. Bart, Jr.	Peter Bent Brigham Hospital, Boston	Surgery
Schantz, Arthur S.	Massachusetts General Hospital, Boston	Pathology
Schnitker, Paul C.	Strong Memorial Hospital, Rochester, New York	Medicine
Schoolwerth, Anton C.	Boston City Hospital (Harvard Service), Boston	Medicine
Schuler, John G.	Boston City Hospital (Harvard Service), Boston	Surgery



On Internship night,
the Alumni Association . . .

. . . wines, dines, and
welcomes the Seniors.





Segel, William D.	Roosevelt Hospital, New York, New York	Surgery
Sewall, Warren	Mount Auburn Hospital, Cambridge	Rotating
Shapiro, Daniel W.	University of Colorado Medical Center, Denver, Colorado	Pediatrics
Shenkin, Budd N.	University of California Hospitals, San Francisco, California	Pediatrics
Sherwood, Michael R.	Mount Auburn Hospital, Cambridge	Rotating
Shulman, Richard S.	Boston City Hospital (Harvard Service), Boston	Medicine
Siegel, Arthur J.	Peter Bent Brigham Hospital, Boston	Medicine
Silver, David J.	Medical College of Virginia, Richmond, Virginia	Surgery
Simmons, Michael A.	Johns Hopkins Hospital, Baltimore, Maryland	Pediatrics
Simon, Harvey B.	Massachusetts General Hospital, Boston	Medicine
Singer, Karl L.	University of Colorado Medical Center, Denver, Colorado	Medicine
Sites, Vincent R.	St. Luke's Hospital Center, New York, New York	Medicine
Smith, Donald A.	Duke Hospital, Durham, North Carolina	Medicine
Smith, Douglas G.	Los Angeles County General Hospital, Los Angeles, California	Rotating
Sommer, Alfred	Beth Israel Hospital, Boston	Medicine
Stein, Stephen A.	Yale-New Haven Hospital, New Haven, Connecticut	Surgery
Stossel, Thomas P.	Massachusetts General Hospital, Boston	Medicine
Sugihara, Jared G.	Presbyterian-St. Luke's Hospital, Chicago, Illinois	Medicine
Walker, Pamela P.	Cleveland Metropolitan General Hospital, Cleveland, Ohio	Pediatrics
Weiden, Paul L., Jr.	University Hospitals of Cleveland, Cleveland, Ohio	Medicine
Weikel, Anthony M.	Beth Israel Hospital, Boston	Surgery
Weinerth, John L.	Duke Hospital, Durham, North Carolina	Surgery
Weir, Gordon C.	University Hospitals of Cleveland, Cleveland, Ohio	Medicine
Wesley, John R.	Massachusetts General Hospital, Boston	Surgery
White, Eric S.	Roosevelt Hospital, New York, New York	Surgery
Winterer, Joerg C.	Johns Hopkins Community Pediatrics Program, Baltimore, Maryland	Pediatrics
Wise, Jonathan K.	North Carolina Memorial Hospital, Chapel Hill, North Carolina	Rotating
Wolman, Carol S.	Stanford University Affiliated Hospitals, Palo Alto, California	Medicine
Wright, Peter F.	Children's Hospital Medical Center, Boston	Pediatrics
Zaentz, S. Donald	Vanderbilt University Hospital, Nashville, Tennessee	Medicine

